TAMPERE UNIVERSITY OF TECHNOLOGY

DIXIT K.C.

FACTORS IN CONSIDERING MANUFACTURING INVESTMENT DECISIONS IN FINLAND VS ABROAD-A MIXED-METHOD COMPARISON OFLARGE AND SMALL FIRMS

Master of Science Thesis

Prof. Jussi Heikkilä has been appointed as the examiner at the Council Meeting of the Faculty of Business and Built environment on June 15th, 2015.

ABSTRACT

TAMPERE UNIVERSITY OF TECHNOLOGY
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With the advent of modern transportation and communication technologies, businesses could globalize their operations easily. Companies relished the freedom to capture the cost benefits of resources by offshoring all or some part of their manufacturing to lower cost countries. However, the benefits started to cease with time resulting in rising costs, quality issues and other risks. Therefore, some of the same businesses started to ponder on options to reclaim the manufacturing advantages elsewhere, especially back home giving rise to the phenomenon called reshoring.

The objective of this thesis is to identify the factors influencing the decision to offshore, reshore, or initiate new investments in Finland. The primary focus is on the manufacturing companies based in Finland and the impact of the identified factors on their decision-making. The study explores the factors that pushed manufacturing companies to leave Finland in the first place, and then goes on to identify the pull factors that brought them back from their earlier offshored production location.

In order to initiate the production location discussion of manufacturing companies, database study was conducted to reveal the investment trend, magnitude and countries of investment locations by large Nordic manufacturing companies. The results show large investments both in terms of number and magnitude made abroad compared to investments in home country. This was followed by qualitative research conducted in two Finnish manufacturing firms. Semi-structured interviews were organized with key personnel involved in offshoring and reshoring decision-making. Various push and pull factors present in offshoring from and reshoring to Finland were identified and discussed in detail. The study is limited to primary information collection from small and medium enterprises and their decision drivers. In future, however, more SMEs and large enterprises could also be involved in the research and analysis.

PREFACE

This thesis offered me an opportunity to explore into the world of manufacturing and complex scenarios around which new investment, offshoring and reshoring decisions are made by Nordic manufacturing companies. I was able to understand how manufacturing sector has evolved over the past decade in Finland. Based on those insights, I proposed my views on how manufacturing sector can be revitalized in Finland.

I am grateful to my supervisor Jussi Heikkilä for providing me this platform to learn and grow under his constant and sharp supervision. I would also like to extend my gratitude to ROaMING project team for their support, and the company representatives for their valuable time and meaningful input during the research process.

I specially thank my family and friends who, I know, are always there for me. As I conclude my thesis with the final full-stop, I am fully aware learning has just begun.

Tampere, 24.11.2015

Dixit K.C.

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ABBREVIATIONS AND NOTATION

CEO	Chief executive officer
EU	European Union
IP	Intellectual property
NAFTA	North American Free Trade Agreement
OH	Overhead
R&D	Research and development
ROaMING	Reshoring of manufacturing
SMEs	Small and medium-sized enterprises
USA	United States of America

1. INTRODUCTION

1.1. Background

The declining shipping costs as well as cheap but efficient telecommunication had great impact on the surge of offshoring trend (Levy, 2005). Leibl et al. (2009) believe that the cost saving from direct labor cost was crucial driver in offshoring manufacturing. Offshoring to low costs countries like China and India was influenced not only by low costs but also by enriched labor capabilities, business-friendly regulations, attractive domestic markets, and supportive governments (Vestring et al., 2005).

The companies also realized that there were also risks associated with offshoring which included poor quality, higher transportation costs, reduced reliability, supply disruptions, logistics failures, and communication problems (Schoenherr et al., 2008). Vestring et al. (2005) further added risks arising from political instability, accelerating wage rates, intrusive regulatory reforms, and currency fluctuations.

With the new knowledge of risks associated with offshoring, Fratocchi et al. (2014) claim that the trend of reshoring (or back-reshoring), i.e., reversal of previous offshoring decision by bringing manufacturing back home, is on the rise. Gylling et al. (2015) also have noticed reshoring of manufacturing back home, but not necessarily to the manufacturing company's home country but to the broader Eurozone. Tavassoli et al. (2013) coined the term 'manufacturing renaissance' in order to signify the return of manufacturing from low cost countries citing reasons like rising wages, declining quality, new innovations, and demand for home made products.

Reshoring of manufacturing is becoming a common phenomenon due to the co-existence of repelling as well as attracting factors. Bailey & De Propris (2014) briefly advocate the existence of 'push' and 'pull' factors in reshoring of manufacturing. They hint that the rising wages, increasing transport costs and decreasing overall cost gap as 'push' factors for firms to move manufacturing away from low cost countries. In addition to the push factors, they also list the possible 'pull' factors as: eased home government policy, skilled labor and reduced wages, and short lead times in return of manufacturing to home country.

The existing literature has rarely classified the reasons to offshore and reshore based on these push and pull factors. On top of it, there had been fewer investigations on what could prompt the firms to return their manufacturing home or what could be the possible pull factors to bring back manufacturing given the rising push factors prevalent in the low cost destinations.

1.2. Objective and scope

There are numerous research studies undertaken in the field of reshoring. They fulfil their objectives without addressing all the issues comprehensively. In other words, they leave some gaps for further research. This thesis tries to explore those gaps and fill one of such gaps. The previous studies have successfully defined reshoring and identified its drivers. The need for making a distinction among those drivers with respect to their push and pull attributes is yet to be addressed. Table 1 introduces selected few existing studies on reshoring and the gaps identified in them.

Table 1. *Research studies in reshoring and their gaps.*

Research Study	Primary Focus	Methodology	Key Findings	Gaps
Kinkel & Maloca (2009)	Driving factors and antecedents of manufacturing offshoring and backshoring	Database study	Frequency and reasons of backshoring relative to offshoring	Limited to German manufacturing firms only No distinction between push and pull factors
Bailey & De Propris (2014)	Definition of reshoring and its drivers in automotive sector of UK	Interviews, policy reviews and surveys	Requirement of long-term, proactive and holistic manufacturing industrial policy in UK	Limited to automotive sector of UK only No distinction between push and pull factors
Stentoft et al. (2015)	Reshoring of manufacturing	Standard content based literature review	Drivers for reshoring and/or insourcing	Not specific to a country or region No distinction between push and pull factors

One clear gap exists in the above listed research studies: classification of drivers of reshoring as push factors and pull factors from the vantage point of comparing the home country with the target country. In order to address this gap, the geographic scope is limited to Finland and a selection of Finnish companies. This thesis reorganizes the drivers of reshoring by first categorizing them based on their nature of pushing or pulling the firms to decide on reshoring. This allows distributing the drivers into at least two groups. Secondly, based on the attractiveness of the pull factors, it initiates the design framework for appealing pull factors to ease the decision making of the firms to bring manufacturing home. Therefore, the objective of this paper is…

> *…to identify the existing push and pull factors in reshoring of manufacturing back to Finland from a location to which a manufacturing company has earlier offshored their production.*

In order to reach this objective, thesis moves forward by reviewing the literature on location decisions and their drivers. A systematic framework to analyze reshoring decisions is thus designed to identify the push and pull factors of reshoring in the context of selected case companies and their decision making situations.

1.3. Research process

The geographic scope of the research is limited to Finland. The following is the major research question that the study will focus on

- How do Finnish manufacturing firms decide upon reshoring and what are the possible push-pull factors in the offshoring/reshoring decision making?

The first research task was to identify Finnish companies involved in reshoring activities. For this purpose, secondary sources were used intensively and thus emphasized the role of desktop research. The research question set the requirement for in-depth analysis (including face to face interviews) of selected companies that were chosen among a longer list of Finnish companies that were identified having done reshoring. The empirical part focused on how different firms make their offshoring and reshoring decisions based on, e.g., company size, type, geography and other attributes in the literature review. The later part also attempted to look into discussion and design of the pull factors that can influence future reshoring decisions involving various stakeholders identified during the research. Figure 1 elaborates an overview of the research process for the thesis.

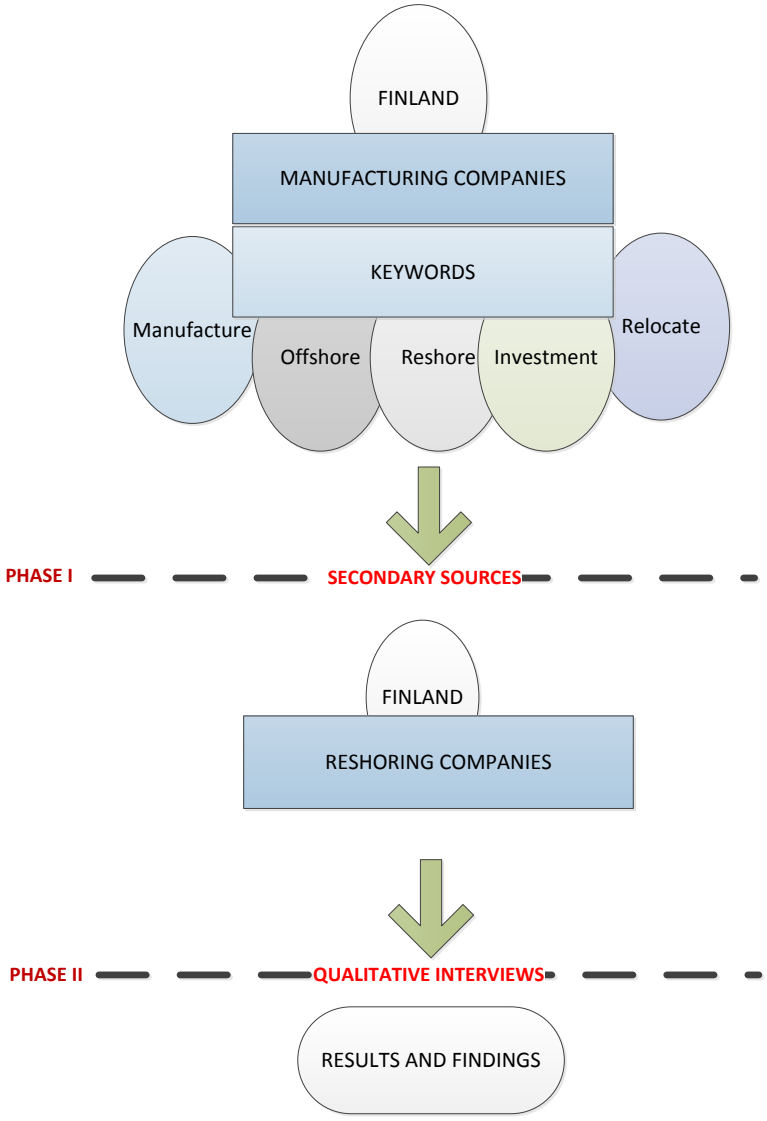

Figure 1. *Research methodology: qualitative interviews.*

Phase I and II signify the breakdown of the two crucial parts of the research. During Phase I, the focus will be on identifying Finnish manufacturing companies that are involved in reshoring activities. Secondly, the identified companies will be approached for qualitative interview in order to gather detailed knowledge about the company's decision making on location decision. The literature development as well as the search for the reshoring companies will be carried out simultaneously. Once there is a long list

of those companies, the attempt would be to approach them for interviews and discussion on their reshoring decision. Based on those interactions, the thesis will report its results and finding. In addition to the above research question, the thesis will also explore the trend of investment decisions of large manufacturing businesses of Finland, Sweden and Norway through database research as shown in Figure 2. The research questions addressing this objective are as follows:

- What are the strategic reasons behind making manufacturing investments by large Finnish, Swedish and Danish companies?
- How comparable are the strategic decisions of large Finnish firms to the ones made my small and large manufacturing firms of Finland?

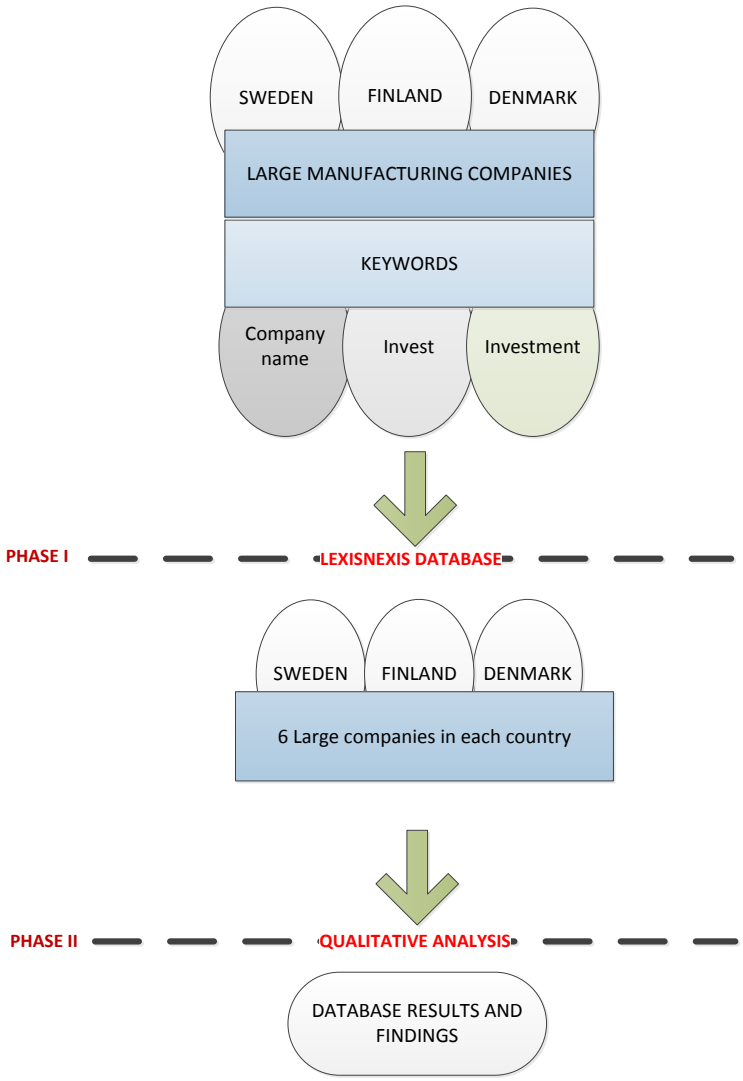

Figure 2. *Research methodology: database analysis.*

The first step would be to identify the top few manufacturing companies in Finland, Sweden and Denmark based on revenues or turnover. Once the selection is made, the next step is to initiate database research (LexisNexis in this thesis) for the news related to manufacturing investments made globally. Then the investments are segregated into home and foreign investments in order to study the scale and trend of those investments. This would provide an appropriate background for discussion and comparison of manufacturing investment decisions made by large and small-and-medium companies in Finland.

1.4. Structure of the thesis

This thesis contains six chapters. The content and objectives of each of them are discussed in brief as follows:

1. Chapter 1 introduces the background of the thesis along with the main objectives. It also includes the research process employed during the thesis.

2. Chapter 2 initiates the literature review section. It includes existing literature on offshoring, and reshoring of manufacturing firms. It discusses the influencing factors while making location decisions.

3. Chapter 3 presents the LexisNexis database findings on investment made by six big firms each in Finland, Sweden and Denmark. It depicts the trend and strategic reasons for investment made at home and foreign locations by six top revenue companies in each country.

4. Chapter 4 includes the empirical section comparing the reshoring phenomenon taking place in two selected manufacturing firms in Finland. It investigates the decision making procedures of those firms and the impact made by the push and pull factors.

5. Chapter 5 discusses the lessons learnt by studying the gaps and findings comparing the literature and the empirical parts. The results are also included in this chapter.

6. Chapter 6 concludes the thesis.

2. LITERATURE REVIEW

The key theories that build the thesis are related to the international location decisions and the key drivers behind making location decisions. The following sections introduce different manufacturing location decisions including outsourcing, offshoring and reshoring. It is followed by the factors having influence over those location decisions. In the last section, the two sections are linked to build a framework for push and pull factors responsible for reshoring of manufacturing.

2.1. International location decisions

There are attempts to associate the terms 'offshoring' and 'outsourcing' on numerous accounts even though they are clearly different concepts (Olsen, 2006). Jahns et al. (2006) point to the lack of explicit definition for the term 'offshoring'. In this light, Kinkel & Maloca (2009) look for the missing distinction by outlaying the concepts in two dimensions: spatial dimension and ownership dimension as shown in Table 2.

***Table 2**. Forms of outsourcing, insourcing and offshoring (Kinkel & Maloca, 2009).*

	Ownership Dimension	
Spatial Dimension	***Internal***	***External***
National	Domestic relocation or domestic re-concentration	Domestic outsourcing or domestic insourcing
International	Foreign relocation (Captive offshoring) or foreign re-concentration (internal back-shoring)	Foreign outsourcing (Offshore outsourcing) or offshore insourcing (external back-shoring)

The table above draws the focus on where the production is taking place (spatial dimension) and who has the control over it (ownership dimension). Based on the dimensions, if a company decides to relocate its production or part of production from one of its premises to another within home country, it is called domestic relocation. And when it brings in production from relocated premise to its previous premise, then it is termed as domestic re-concentration. In both cases, the control or ownership of production remains with the company. However, if a supplier is involved, then change in ownership takes place. Therefore, if the company moves its production from its premise to one of its suppliers located in home country then the process is domestic outsourcing. On the contrary, if the company decides to pull back production from domestic supplier then it would be called domestic insourcing. (Kinkel & Maloca, 2009) Figure 3 elaborates the overall concept being discussed.

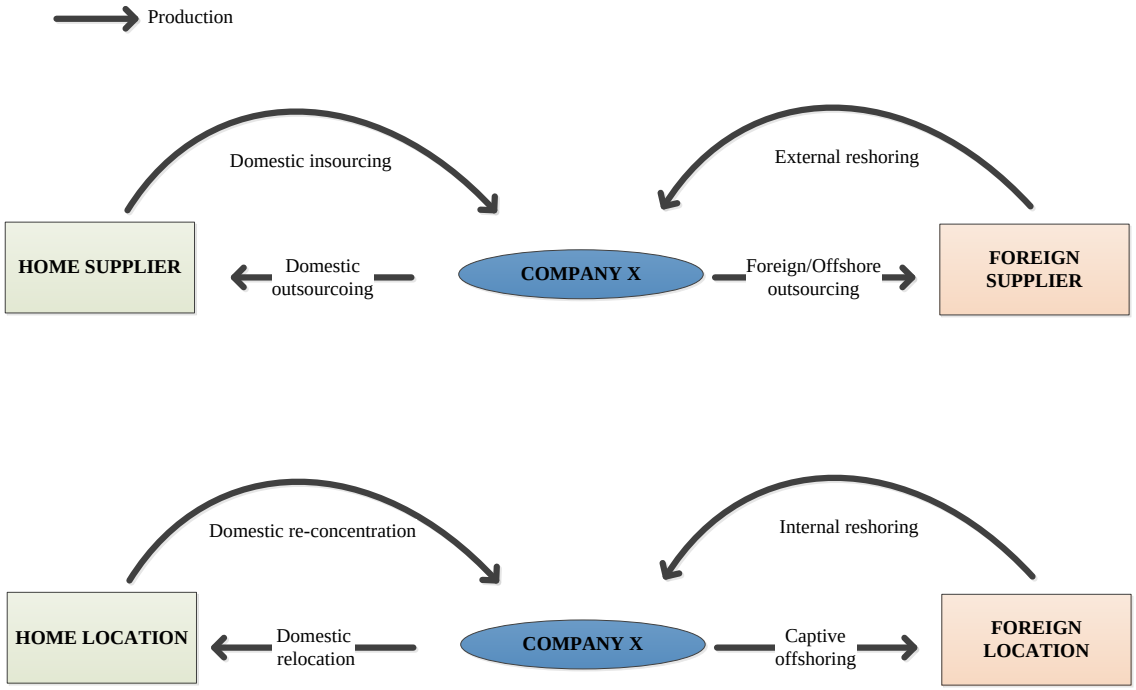

Figure 3. *Concept of relocation, outsourcing, offshoring and back-shoring (in this research, we call this reshoring).*

When the spatial dimension changes to foreign country, the case of offshoring arises. When a company decides to produce on its own in foreign country, then it is called captive offshoring. On the other hand, if a company producing all on its own in foreign country decides to move the production location then that is termed as internal back-shoring. In case the company decides to allow its foreign supplier to produce, then it

would be offshore outsourcing. Lastly, if the company decides to pull back its production from foreign supplier, then it would be external back-shoring. (Kinkel & Maloca, 2009) In order to initiate reshoring discussion, outsourcing and offshoring phenomenon should be discussed beforehand as they are preceding actions leading to reshoring.

2.1.1. Outsourcing

Outsourcing is defined as handing the external providers with the activities that have been done in-house previously. If the provider is located in the same country, it is then called domestic outsourcing. In case of foreign location, the handing of the activities becomes offshore outsourcing. (Kedia & Mukherjee, 2009) Quoting the Institute of Supply Management, Jahns et al. (2006) refer outsourcing as one of many make-or-buy decisions in which a company decides to elect a supplier to buy a product or service that was previously made or performed by the company itself. Ehie (2001) pin points manufacturing outsourcing as a process of identifying which of the manufacturing activities should be granted to the third-party supplier or provider. Slepniov & Vejrum Waehrens (2008) criticize outsourcing as quick-fix solution based on make or buy decision targeting mainly cost savings.

2.1.2. Offshoring

Offshoring is urged to be relocation of business functions from home to foreign locations (Roza et al., 2011). Ellram et al. (2013) focus on the internal control by referring offshoring to locating self-owned manufacturing facility in regions outside the company's headquarters. Offshoring, at times, is also limited to geographical dimension in which some part of value chain of a company is relocated beyond the national border (Sinha et al., 2011).

While offshoring to foreign location, the issue can also be the distance from the headquarters. If the offshore activities are at medium distance or with narrow geographic scope, then it is called 'nearshoring'. Offshoring, in this viewpoint, will mean to locate business activities at a great distance or with wide geographic scope from the headquarters. (Slepniov et al., 2013) Table 3 illustrates the forms of offshoring and nearshoring based on operations mode and distance from the headquarters.

Table 3. *Forms of offshoring and nearshoring. (Slepniov et al., 2013).*

	Distance	
Operations Mode	***Small***	***Great***
Contractual	Nearshore Outsourcing	Offshore Outsourcing
Partnership	Nearshore Strategic Partnerships	Offshore Strategic Partnerships
Captive	Captive Nearshoring	Captive Offshoring

The above table defines offshoring distance in terms of geographical separation. However, Carmel & Abbott (2007) define the distance or proximity beyond geographical dimension in case of nearshoring. They offer, as in Table 4, six constructs of proximity which explain nearshoring broadly.

Table 4. *Constructs of a nearshore. (Carmel & Abbott, 2007).*

S.N.	**Constructs of a nearshore**	**Characteristic of nearshore destination**
1.	Geographic	Physically closer and takes less travel time to reach
2.	Temporal	Some time zone overlap
3.	Cultural	Similar cultural characteristics (way of life, way of doing business)
4.	Linguistic	Shares linguistics similarities (English as language of business or same native language)
5.	Political/Economic	Political alignment or economic grouping
6.	Historical	Shares some historical perspectives such as colonial history, diaspora linkages

First, geographic construct indicates towards the geographical proximity between the home company and the sourcing location. Second, temporal construct indicates the preference of the zero time difference of the clients when they choose a sourcing partner. Third, the proximity can be derived from common business ethics as expressed in cultural construct. Fourth, linguistic construct emphasizes bonding on grounds of common language. Fifth, the political or economic construct points towards belonging to groupings like EU, NAFTA and similar others. Lastly, historical construct pointed towards making use of colonial engagements or diaspora linkages of the sourcing location. (Carmel & Abbott, 2007)

2.1.3. Reshoring

Reshoring of EU manufacturing (2014) defines reshoring as the partial or total return of production previously offshored to low-wage countries to the original country, to serve local, regional or global demand. The other fitting definition for reshoring is delivered by Kinkel & Maloca (2009) describing it as bringing back the production or some parts of it from self-owned foreign locations (internal back-shoring) or from foreign suppliers (external back-shoring) to the domestic production location. Furthermore, Tate et al. (2014) confirms that reshoring is the relocation of manufacturing facilities of currently offshored locations to new emerging and attractive locations or to home.

Rationale for reshoring

The essence of manufacturing reshoring on national economy as defined by Reshoring of EU manufacturing (2014) is highlighted under the following points:

- Job creation including the creation of supporting jobs
- Higher manufacturing pay compared to service pay
- R&D investments of manufacturing firms (innovation, IP, high value jobs)
- Potential for exports and reduced imports

First, manufacturing was solely responsible for 62 million jobs in the advanced economies in 2000 (Manyika et al., 2012). Additionally, based on Employment Requirements Matrix: Chain-Weighted Real Domestic Employment Requirements Table, 2008, Ettlinger & Gordon (2011) calculated that motor vehicle manufacturing, computer manufacturing and steel product manufacturing create 8.6, 5.6 and 10.3 indirect jobs respectively for each direct job in those manufacturing industries in USA only. Second, Langdon & Lehrman (2012) observed 17% higher pay for manufacturing jobs compared to non-manufacturing jobs in USA. Third, Manyika et al. (2012) present

manufacturing as a vital source for innovation and competitiveness. Fourth, they also claim that manufacturing boosts research and development, exports as well as productivity.

2.2. Factors influencing location decisions

Escalated global competition has forced firms to relocate production so as to remain competitive and serve customer faster (Atthirawong & MacCarthy, 2002). Production offshoring has become a common tactic to increase international competitiveness (Canham & Hamilton, 2013). The understanding of Lampel & Bhalla (2011) suggests that offshoring enables firms to practice greater flexibility at lower costs. However, Lewin & Peeters (2006) claim that offshoring if perceived only as a cost-cutting strategy could not deliver a sustained competitive advantage. In 1998, Dunning came forward with four major variables influencing location decisions of multinational enterprises listed as follows:

1. Resource seeking advantage
2. Market seeking advantage
3. Efficiency seeking advantage
4. Strategic asset seeking advantage

First, resource seeking advantage concerns the availability of raw materials, infrastructure as well as local partners. Second, market seeking advantage is related with availability of local talent and suppliers, access to domestic markets, and government economic policies. Third, efficiency seeking advantage covers the production cost related factors, specialized industry clusters and removal of trade barriers. Lastly, strategic asset seeking advantage includes availability of knowledge-related assets, synergies gained through local presence and opportunities offered in exchange of tacit knowledge. (Dunning, 1998) Furthermore, Ferdows (1997) postulates three major strategic reasons behind locating a foreign plant as follows:

1. Access to low cost production input factors
2. Access to skills and knowledge
3. Proximity to market

First, production input factors include exploiting cheap labor, energy, raw materials, and capital. Second, access to skills and knowledge refers to the proximity to universities, research centers or sophisticated suppliers, customers and competitors which allows capturing the know-how for business. Third, in seeking proximity to market, companies

look into reliability and pace of product delivery, customization abilities, and reduction in financial and trade risks including avoiding trade barriers. (Vereecke & Van Dierdonck, 2002)

In an attempt to further simplify the factors affecting location decisions, MacCarthy & Atthirawong (2003) identified the sub factors building each major factor. Table 5 depicts the major factors along with their corresponding sub-factors that have impact on the international location decisions.

Table 5. *Factors affecting location decisions (MacCarthy & Atthirawong, 2003).*

Major Factors	Sub-factors
Costs	Fixed costs; transportation costs; wage rates and trend in wages; energy costs; other manufacturing costs; land cost; construction/leasing costs and other factors (R&D costs, transaction and management costs etc.)
Labor characteristics	Quality of labor force; availability of labor force; unemployment rate; labor unions; attitude towards work and labor turnover; motivation of workers and work force management
Infrastructure	Existence of modes of transportation; quality and reliability of modes of transportation; quality and reliability of utilities (water supply, waste treatment, power supply etc.) and telecommunication systems
Proximity to suppliers	Quality of suppliers; alternative suppliers; competition for suppliers; nature of supply process (reliability of the system) and speed and responsiveness of suppliers
Proximity to markets/customers	Proximity to demand; size of the market that can be served/potential customer expenditure; responsiveness and delivery time to markets; population trends and nature of variance of demand
Proximity to parent company's facilities	Close to parent company
Proximity to competition	Location of competitors
Quality of life	Quality of environment; community attitudes towards business and industry; climate, schools, churches, recreational opportunities (for staffs and children); education system; crime rate and standard of living
Legal and	Compensation laws; insurance laws; environmental regulations; industrial

regulatory framework	relations laws; legal system; bureaucratic red tape; requirements for setting up local corporations; regulations concerning joint ventures and mergers and regulations on transfer of earnings out of country rate
Economic factors	Tax structure and tax incentives; financial incentives; custom duties; tariffs; inflation; strength of currency; business climate; country's debt; interest rates/exchange controls and GDP/GNP growth, income per capita
Government and political factors	Record of government stability; government structure; consistency of government policy; and attitude of government to inward investment
Social and cultural factors	Different norms and customs; culture; language and customer characteristics
Characteristics of a specific location	Availability of space for future expansion; attitude of local community to a location; physical conditions (e.g. weather, close to other businesses, parking, appearance, accessibility by customers etc.); proximity to raw materials/resources; quality of raw materials/resources and location of suppliers

As seen from above, location decision is not an outcome of haphazard selection. There are drivers, motives, and factors that are taken into consideration before deciding on the suitable location. There are strategic, economic and similar other aspects that are weighed in all possible locations before selecting the relatively best one. Carmel & Abbott (2007) argue that companies making sourcing decisions weigh on their locations including distance factors, e.g., if the location is near or far. Figure 4 is an illustration of how a company would compare or weigh two locations based on the factors and drivers identified above.

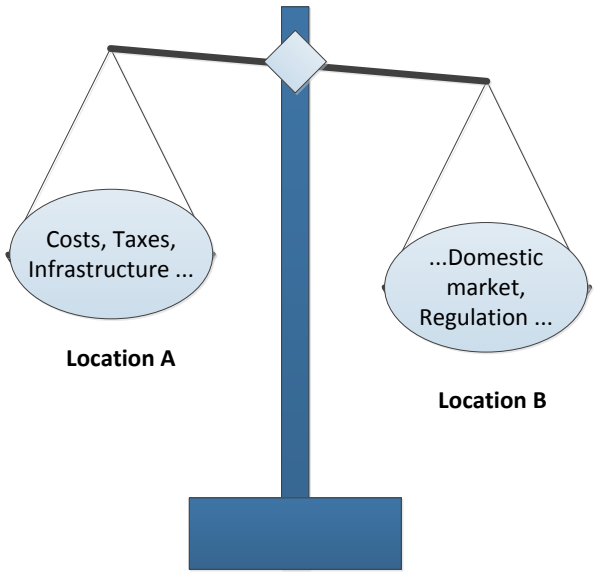

Figure 4. *Comparing locations based on relevant factors.*

Various factors, as discussed above, signify that production location is a complex decision to take. The range and variety of factors and their impact in the decision making process can vary from company to company or location to location. Understanding the variables and aligning them with the company's vision seems to be challenging.

2.3. Push-Pull factors in reshoring of manufacturing

Among all the factors, as discussed in section 2.2 that essentially are considered as the drivers of manufacturing location decisions, Kinkel (2012) suggest that there are mainly two sub divisions: 'push' and 'pull' factors. To validate further, Bailey & De Propris (2014) list rising wages, increasing transport costs and decreasing overall cost gap as 'push' factors, and eased home government policy, skilled labor and reduced wages, and short lead times as 'pull' factors for reshoring. It simply implies that the factors that are favorable at home are the 'pull' factors and those factors that are unfavorable in offshored location are the 'push' factors if it is concerned with reshoring.

As discussed earlier, reshoring takes place only if the production has been outsourced or offshored to a foreign location previously and then moves back. It points towards the existence of motivations to offshore as well. In that case, there should also be the sub-division: push-pull factors of offshoring. In case of offshoring, 'push' factors are the unfavorable conditions present at home whereas 'pull' factors are favorable conditions

at foreign location. Table 6 depicts the motives for German manufacturing companies to offshore and reshore.

***Table 6**. Ranked motives for German manufacturing companies (Kinkel, 2012).*

Motives to offshore ***Pull factors (offshoring)***	**Motives to reshore** ***Push factors (reshoring)***
Reduction in personnel costs	Quality problems
Vicinity to key customers	Flexibility/ability to deliver on time
Access to new markets	Rising labor costs
Taxes, levies, and subsidies	Coordination and monitoring costs
Access to technologies/clusters/new knowledge	Availability/fluctuation of qualified personnel

2.3.1. Push-pull factors in offshoring

The motives to offshore are in other words the pull factors present in offshore locations that lure companies to manufacture in destinations other than home. Among various motives to offshore, shifting manufacturing towards low-wages countries enabled firms to deal with global competition as well as allowed them to gain greater access to emerging markets (Lewin & Peeters, 2006). Furthermore, Dachs et al. (2006) claim that production offshoring allows companies the opportunity to improve the vicinity to customers and markets in emerging key markets. Besides low manufacturing cost, companies look to take advantage from tax savings by deciding to produce in foreign country (Wang et al., 2013). Lastly, Altenburg et al. (2008) argue that emerging nations like India and China have been successful in creating favorable conditions for innovation.

Rilla & Squicciarini (2011) claim the home country environment can behave as pushing element if resources are short in supply and the costs are rising. Then the companies might look for solutions to the challenges being faced in home environment. When these push factors at home get coupled with the pull factors at foreign location, offshoring phenomena is likely to take place. The following push factors in the Nordic region, as identified by Alsén et al. (2013), are being held responsible for rise of offshoring of manufacturing from the Nordic region:

- Decline in cost competitiveness

- High manufacturing wages
- Inflexible labor regulations
- Increasing energy costs
- Increasing logistics costs within Europe
- Declining returns on R&D investments
- Shifting demand to emerging economies

Manufacturing companies in Europe and USA have the opportunity to restructure costs to achieve huge (20-40%) cost savings if they decide to offshore. One of the reasons is the high wage gap which exists between the high cost countries and the low cost countries. (Pedersen, 2006) On top of that, manufacturers in the Nordic region have to deal with rigid labor policies and regulations. The rising energy costs are not helping the cost advantage either. Besides all these, the logistics costs within Europe is far more expensive than that from other competing economies. On one hand the demand is shifting to emerging economies and on the other, the returns on research and development are not paying off well. All reasons like these cumulated together forms the push factors in industrialized economies to offshore their production to other low cost, strategic fit regions. (Alsén et al., 2013) Figures 5 reconstructs the couplings of push factors (at home) and pull factors (abroad) that are driving companies to offshore manufacturing to foreign location.

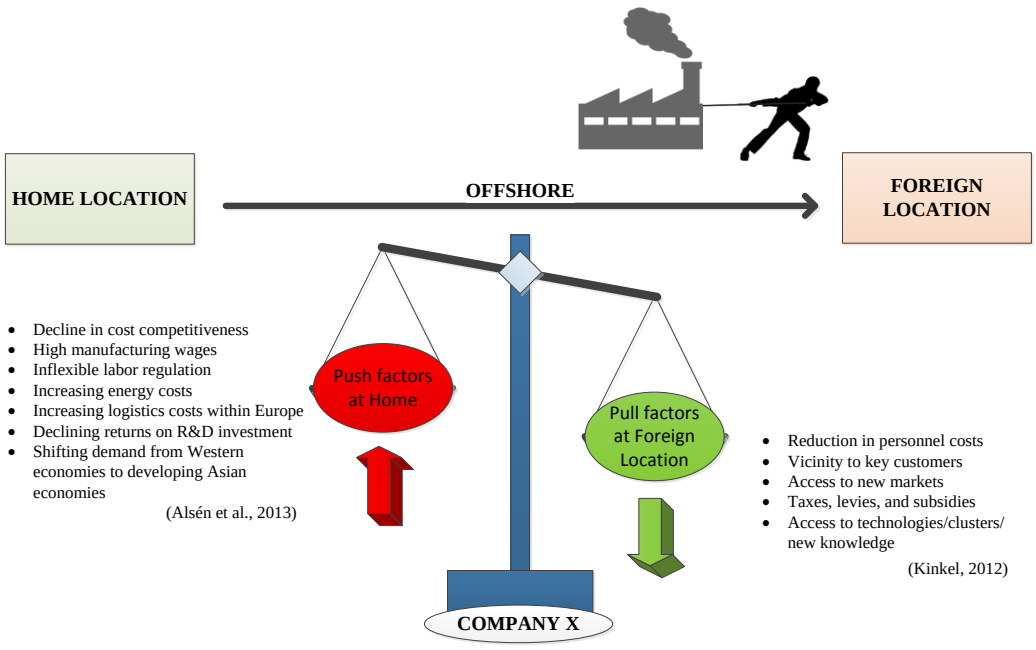

Figure 4. *Role of push factors (home) and pull factors (foreign location) in offshoring.*

2.3.2. Push-pull factors in reshoring

After discussion about push-pull factors present in offshoring, it is also relevant to explore pull factors at home and push factors abroad to create a base for reshoring. Among the motives to reshore, Dachs et al. (2006) rank quality problems as the top motive in European context. Schoenherr et al. (2008) point towards supply chain risks in production offshoring which includes poor quality, higher transportation costs, lower reliability, supply disruptions, logistical failures, natural disasters and increased communication difficulties. Firms competing for same resources in the labor market in low cost countries have the temptation to raise the wages (Tate et al., 2014). Besides rising labor cost, Dachs et al. (2006) also indicate the lack of qualified labor in inducing back-shoring decisions. Moreover, Stentoft et al. (2015) also highlight the drivers for reshoring phenomena as shown in Table 7 below:

Table 7. *Drivers for reshoring of manufacturing (Stentoft et al. 2015).*

Drivers for reshoring (and/or insourcing)	Specific issues
Cost	Increasing labor costs
	Increasing logistics costs
	Eroding cost advantage
	Higher coordination efforts and transaction costs
	Miscalculation of actual cost
	Changes in energy costs
	Productivity differences between locations
	Economies of scale and scope
	Capacity utilization
Quality	Quality not at an acceptable level
Time and flexibility	Delivery lead-time
	Demand volatility and supply chain resilience
	Production and delivery reliability
Access to skills and knowledge	Proximity to R&D resources
	Availability of skilled labor
	Utilization of new technologies and automation
Risks	Threat of losing know-how and intellectual property
	Supply chain risks
Currency exchange rates	Volatility in the currency exchange rates
Incentives	Incentives from governments
Other factors	Correction of a misjudged decision
	Increased focus on core activities
	Shrinking market size

On top of the push factors prevalent in offshore locations, there are also pull factors or attractive elements at home country that drives the reshoring phenomena. Tate (2014)

refers to the pull factors that are attracting US companies in reshoring from low cost countries. His paper quotes the following as major pull factors in reshoring taking place in USA:

1. Surplus warehouse and manufacturing space resulted due to previous offshoring
2. Decreasing cost of robotics
3. Getting rid of slow-steaming transportation
4. Flexibility for innovation and product changes
5. Strict laws on intellectual property theft
6. Product quality
7. Lower energy costs

First, offshoring of production had created idle assets in US, which can now be retrofitted and modernized for manufacturing purposes. Secondly, the labor intensive jobs are being automated with cheaper robotics. Third, reshoring also created an opportunity to get rid of inventory stuck in the slow transportation. Fourth, the reshoring would shorten the supply chain giving possibility to manage innovation and product changes. Fifth, strict laws in US allowed companies to reduce the risk of intellectual property theft. Sixth, product quality could be ensured when the production is close to the headquarters. Lastly, low cost of energy created an advantage by way of reducing manufacturing costs in the US. (Tate, 2014) Figure 6 below adjoins the pull factors at home with push factors at offshore location which results in the reshoring of manufacturing.

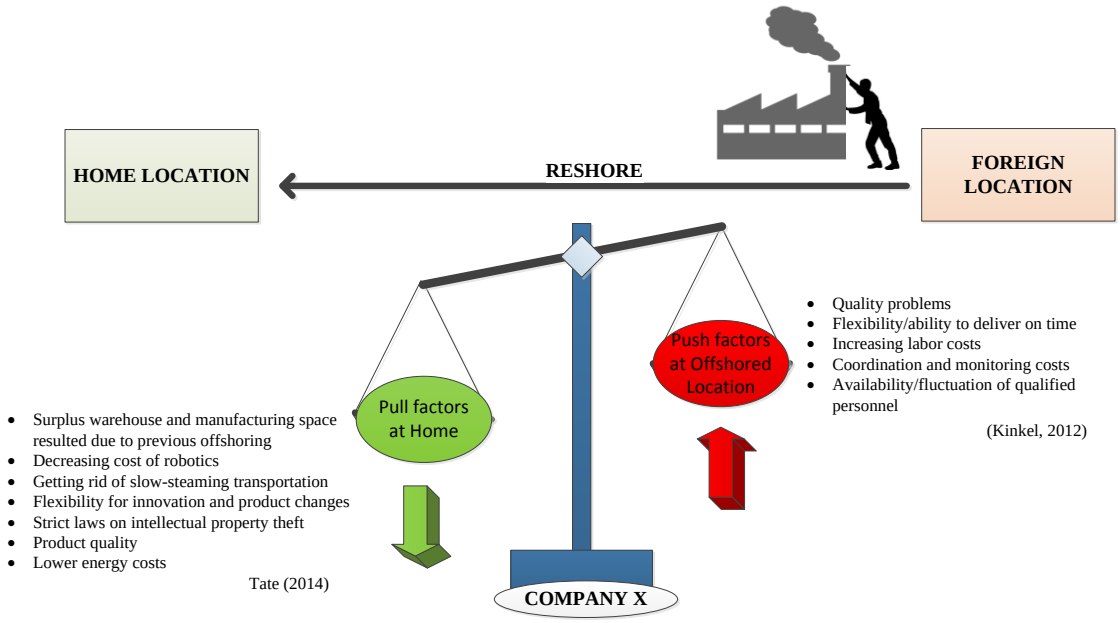

Figure 6. *Role of push factors (offshored location) and pull factors (home) in reshoring.*

2.3.3. Reshoring framework

This thesis tries to identify similar push and pull factors present in Finland. Figure 7 illustrates the framework of the thesis. From the perspective of a researcher being based in Finland, the term 'home location' refers to Finland. 'Foreign location' refers to the global locations where Finnish companies had been offshoring or outsourcing their production or some part of it.

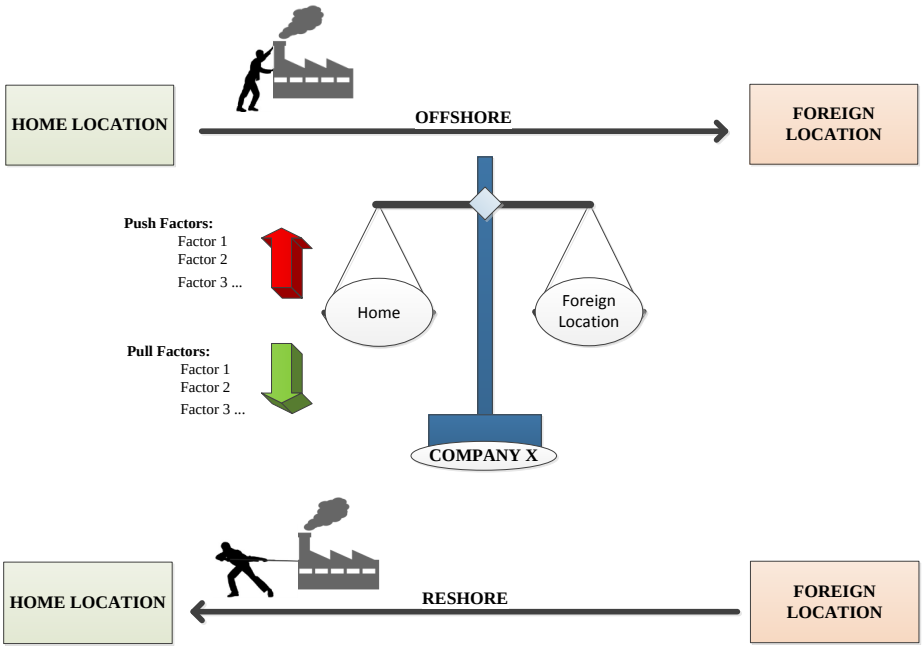

Figure 7. *Push-pull factors in Finland and their role in offshoring/reshoring decisions.*

'Push factors' denote the factors in Finland that seem unfavorable for the Finnish companies to locate their production in Finland. Due to these 'push' factors, Finnish companies considered offshoring in the past. On the other hand, 'pull factors' define the drivers that allure Finnish companies, that had previously offshored their production activities, to return to Finland. 'Company X' represents the shortlisted Finnish companies that are involved in recent reshoring of manufacturing in Finland. Based on the companies experience and knowledge of offshoring, the 'push' factors will be identified and based on their reshoring experience, the 'pull' factors for Finland will be determined.

3. RESEARCH METHOD AND MATERIAL

The purpose of this chapter is to explain the choice and flow of the research. First section defines the research methodology used. It justifies the reason for declaring the research a qualitative one even though supplemented by a quantitative survey. Second section discusses the methods adopted for data collection and analysis made upon them.

3.1. Research methodology and schedule

An academic research which explores issues and questions relevant to business and management is termed as business research (Bryman & Bell, 2015). The goal of a research is to serve managerial decision making by supplying accurate information (Zikmund et al., 2012). Collis & Hussey (2013) urge that research methodology is the theory and science behind all research. The two broad main research methodologies are: qualitative and quantitative. Qualitative research methods include case studies, field studies, grounded theory, document studies, naturalistic inquiry, observational studies, interview studies and descriptive studies. In contrast, quantitative methods include empirical studies and/or statistical studies. (Newman & Benz, 1998) Furthermore, Amaratunga et al. (2002) discuss the strengths and weaknesses of the two methods by adapting the work of Easterby-Smith (1991) as shown in Table 8 below:

Table 8. *Strengths and weaknesses of research methods (Amaratunga et al., 2002).*

	Strengths	***Weaknesses***
Quantitative method	Provides wide coverage of range of situations Fast and economical Relevant for policy decisions (large samples)	Inflexible and artificial data gathering methods Not very effective in understanding processes Not very helpful in generating theories Hard to infer future changes and actions
Qualitative method	Natural data gathering methods Ability to look at change process over time Ability to understand people's meaning Ability to adjust to new issues and ideas as they emerge Contribute to theory generation	Tedious and time consuming data collection Difficult to analyze and interpret the data Hard to control the pace, progress and end-points of research process Low credibility given by policy makers

As seen from the table, results delivered by using quantitative methods are relevant for policy makers if the samples are large. However, in this research, the sample is small as the number of Finnish companies involved in reshoring activities in the past decade (2005-2015) is not significantly high. This leads to small sample size which does not justify conduction of quantitative study or statistical analysis. In contrast to quantitative methods, qualitative methods which are ideal in exploring the change taking place and

also having room for adjusting to new issues and ideas, seem relevant for the research. The research envisages studying the change in perception of the manufacturing industry in Finland regarding reshoring and offshoring decisions. Thus, the approach is to conduct interview studies followed by a quantitative survey among the small group of companies that are identified and shortlisted. Therefore, the thesis falls largely under the category of qualitative research. Gummesson (1993) suggests that qualitative research can be conducted through five data gathering methods, as listed below:

- Existing materials
- Questionnaire survey
- Questionnaire interviews
- Observation
- Action science

First, existing materials commonly refer to secondary source of data that are carried by various media like books, articles, reports, films and similar other sources in exception to human interaction. Second, data gathered from formalized and standardized interviews fall under questionnaire surveys. Third, questionnaire interviews, in contrast to questionnaire surveys, are based on loosely structured open ended questions to collect data. Fourth, observation carries the literal meaning and thus data gathering takes place by way of observing the subject of the study. Finally, action science demands greater involvement of the researcher himself in the research process. It can also include all the other data gathering methods. (Gummesson, 1993) Table 9 shows which methods were used during the research process for the thesis:

Table 9. *Method of data collection in the research.*

Method	Purpose
Existing materials	News report to identify reshoring companies Background study of the companies Database study to explore manufacturing investments by large companies
Questionnaire interviews	Interactive discussion with Company representatives

3.2. Data collection and analysis

3.2.1. Existing material: LexisNexis Academic

Gummesson (1993) outline existing materials mostly secondary sources of data carried by various media like books, articles, reports, films and similar other sources with exception to human interaction. Databases are also one of those media which carry secondary information. LexisNexis Academic is an academic online database containing full-text documents for wide range of academic research projects (LexisNexis, 2015).

Before the use of LexisNexis Academic, the choice of companies depended on information available online. The list of top revenue companies from Finland, Sweden and Denmark obtained from ranking websites was isolated to manufacturing firms. Top six companies from each country were chosen and further information on their manufacturing investments was looked upon in LexisNexis Academic. The keywords used for the research included ‘company name’, ‘invest’ and ‘investment’. From the long list of retrieved news articles, the relevant ones were processed in Microsoft Excel. The key knowledge gathered includes home and away investment during the period 2005-2015 and strategic reasons behind those investments.

3.2.2. Semi-structured interviews

Interviews are one of the qualitative tools that yield direct quotations from people’s experience, opinions and knowledge (Patton, 2005). Interviews, which fall among the most commonly used strategy for qualitative data collection, are broadly classified into three categories namely: structured, semi-structured and unstructured (DiCicco-Bloom et al., 2005). Structured interviews consist of questions having same wording asked in the same sequence to all respondents. The content and form of structured interviews are thus predetermined. Semi-structured interviews proceed with an outline of the topics to be covered without posing pre-written questions. Hence, only the content is predetermined not the form of the interview in semi-structured interviews. Lastly, unstructured interviews do not predetermine either form or content. The goal of unstructured interview is to deal with the predetermined topics during the conversation while the form or mode can vary for each respondent. (Corbetta, 2003)

Based on the classification above, the interview conducted for the research falls under semi-structured interview. All the respondents are asked about a predetermined content but the sequence, mode or form of questions will vary. Since the outline of the interview

is as shown in Figure 8, the interview suitably fits to the definition of semi-structured interviews.

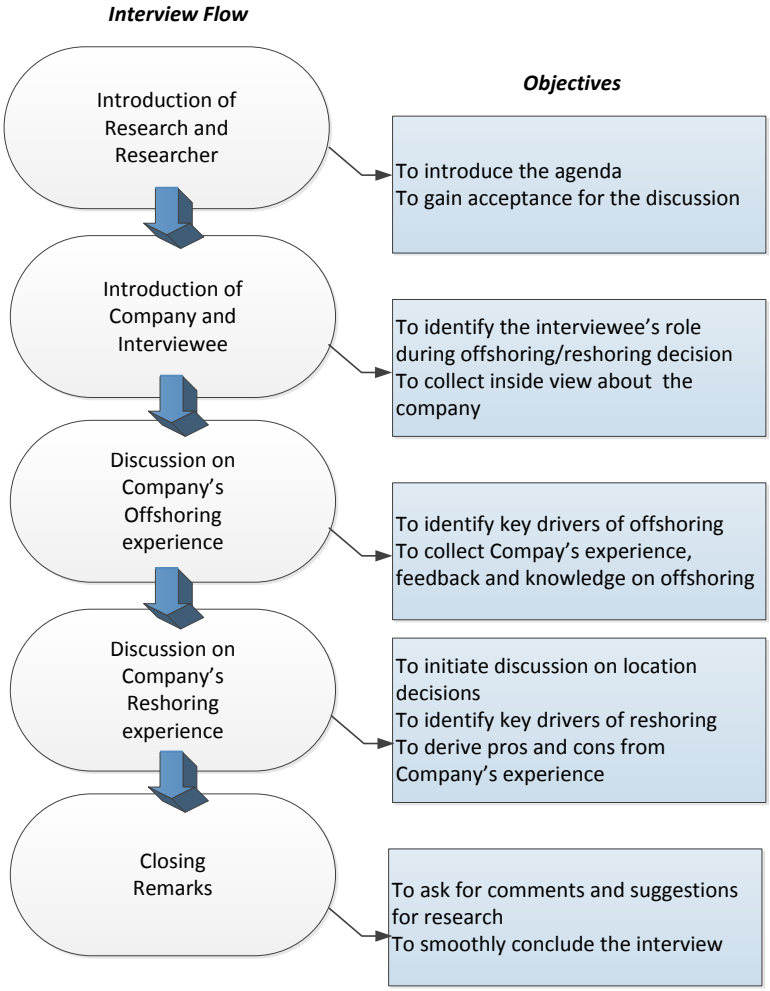

Figure 8. *Outline of the interview.*

There are questions designed to lead the discussion on offshoring followed by reshoring. The reason to initiate the offshoring discussion before reshoring is to guide the discussion towards the primary goal of the research which is reshoring and its drivers in Finland. The average time allocation fitting to this interview outline is about 1-2 hours.

Limitations of qualitative interviews

Qualitative interviews also have their problems and pitfalls. These interviews involve interviewing complete strangers under time as well as trust constraints. Additionally, in

order to sound rational and knowledgeable, the interviewees can create logical and consistent story. Besides that gatekeepers in organizations can limit access to broader subjects and personnel. There is also a chance for ambiguity of language and words which might create room for misinterpretation of questions. (Myers & Newman, 2007)

Diefenbach (2009) lists the following methodological problems existent during data collection phase of semi-structured interview based study:

- The choice of unit of investigation lacks objectivity and systematic approach.
- The selection of interviewees does not happen systematically and objectively.
- Interviewees are not reliable source of data due to existing unconscious biases.
- Interviewees might consciously and deliberately try to mislead the interviewer.

First, the choice of companies, managers or geographic territories can be based on the interest of the researcher or intimacy with either of them. This fails the research to be representative and true to the actual research goal. Second, the interviewer gets to interview right persons only if s/he has great power or influence over the selection process. Third, the interviewees are not reliable source of data as when they are asked to respond 'officially', they might end up giving out theory 'own' opinion which happens unconsciously. Lastly, in order to gain acceptance and in an effort to remain politically conscious, the interviewees might deliberately provide misleading information. (Diefenbach, 2009)

3.3. Reliability and Validity

In qualitative paradigm, reliability and validity represent the trustworthiness, rigor and quality of the research (Golafshani, 2003). Validity refers to providing evidences to prove that the intended object of measurement is actually measured. Reliability, on the other hand, refers to the ability of the measurement method to produce same result over and again. Additionally, generalizability concerns the inference of the results as general for a population. (Stenbacka, 2001) In case of empirical research, the four widely used tests are: construct validity, internal validity, external validity, and reliability. Construct validity refers to identification of right operational measure to conduct the research. Internal validity concerns establishment of cause and effect relationship by using relevant theories and logic to analyze the cases. External validity outlines the criteria to generalize the research findings from case studies to larger population. Reliability demonstrates that the research can be repeated resulting in same findings. (Yin, 2009)

The case study tactics (Yin, 2009) recommended to establish quality in empirical research along with the tactics used in this thesis is listed in Table 10.

Table 10. *Tests and tactics in case study research (Yin, 2009).*

Tests	Case Study Tactic	Tactic used in thesis
Construct validity	• Use multiple sources of evidence • Establish chain of evidence • Have key informants review draft	× × ×
Internal validity	• Do pattern matching • Do explanation building • Address rival explanation • Use logic models	× × - -
External validity	• Use theory in single-case study • Use replication logic in multiple-case studies	- ×
Reliability	• Use case study protocol • Develop case study database	- ×

To justify construct validity, multiple sources of evidence is used during data collection. The first being the qualitative survey which is then followed by semi-structured interviews. The draft of the results is also reviewed by the respondents in order to create consistency of the responses and removal of any biases from researcher. During data analysis, existing patterns in reshoring of manufacturing in the responses are matched from the case companies. The factors (cause) responsible for reshoring phenomena (effect) are explained as well as challenged from various viewpoints.

The research was designed to assess and compare knowledge about offshoring and reshoring decision making of the selected case companies preceded by investment decision of large companies. The entire research process, evidences, reports, findings and tools are saved in university's database. It makes the retrieval of the research information and knowledge for similar future studies and referencing possible.

4. DATABASE STUDY RESULTS

This chapter discusses the findings derived by utilizing LexisNexis Academic. Discussion of trend, nature, reasons and choice of locations of the manufacturing investments in the following sections initiate background to compare the decision making approaches between large, and small and medium Finnish firms.

4.1.1. Manufacturing investments

The first step was to identifying manufacturing investments made by the three Nordic countries: Finland, Sweden and Denmark by identifying corresponding manufacturing companies in those countries. Table 11 lists the top eight manufacturing companies in each of the three countries based on their turnover in 2014.

Table 11. *Biggest revenue generating manufacturing companies in Denmark, Finland and Sweden in 2014. (Talouselämä, 2015; Largest Companies, 2015)*

Finland	Revenue (M€)	Sweden	Revenue (M€)	Denmark	Revenue (M€)
Neste Oil	15 001	Volvo, AB	30 204	Novo Nordisk A/S	12 911
Nokia	12 732	Ericsson, Telefon AB LM	24 337	Arla Foods A.m.b.a	10 587
Stora Enso	10 213	Volvo Car Group	13 873	Carlsberg A/S	8 647
UPM-Kymmene	9 868	Electrolux, AB	11 971	Dansk Landbrugs Grovvareselskab Amba*	7 931
Kone*	7 335	SCA, Svenska Cellulosa AB	11 108	Leverandørselskabet Danish Crown A.m.b.a	7 797
Microsoft Mobile*	7 100	Atlas Copco AB	10 005	Vestas Wind Systems A/S	6 085
Outokumpu	6 844	Scania AB	9 826	Danfoss A/S	4 508
Metsä Group	4 970	Sandvik AB	9 482	Manpower Europe Holdings ApS	4 323

Among all these, only six biggest companies were selected for the LexisNexis study as in Table 12. The reasons to leave out other two companies basically included lack of search results for those companies when using the uniform search keywords template. The search keywords template used three keywords: the company name, 'invest' and 'investment'. Based on insignificant search results, companies like Kone and Dansk Landbrugs Grovvareselskab Amba were left out. Microsoft Mobile, on the other hand, was left out for the changes observed in ownership between the study timeframe 2005 to 2015.

Table 12. *Companies included in the thesis.*

Finland	Sweden	Denmark
Neste Oil	Volvo, AB	Novo Nordisk A/S
Nokia	Ericsson, Telefon AB LM	Arla Foods A.m.b.a
Stora Enso	Volvo Car Group	Carlsberg A/S
UPM-Kymmene	Electrolux, AB	Leverandørselskabet Danish Crown A.m.b.a
Outokumpu	SCA, Svenska Cellulosa AB	Vestas Wind Systems A/S
Metsä Group	Atlas Copco AB	Danfoss A/S

Based on the number of manufacturing investments made by the top 18 companies (6 each in Finland, Sweden and Denmark) during the period 2005-2015, the following categorization was made:

1. Aggregate investments made
2. Aggregate home and abroad investments
3. Individual home and abroad investments

The investments made are further classified based on their nature. Three classifications are new investment, replacement investment and development investment. New investment refers to the first manufacturing investment made in the location like building of new production plant in a new location. Replacement investment refers to

investments made in a country to replace current facilities with entirely new facility. Development investment refers to additional investment made in the existing facility for upgrading efficiency or increasing production output. Figure 9 illustrates the trend of investment by companies in Finland, Sweden and Denmark over the period 2005-2015. The graph shows rising trend till 2007 but sharp decline during 2009. This has been followed by increase in investments until 2011 and then a dip again in 2012.

Figure 9. *Manufacturing investments made by Nordic countries (except Norway).*

Figure 10 depicts the manufacturing investments made at home and foreign locations by the six large manufacturing companies each in Finland, Sweden and Denmark. The number of investments made in foreign locations is higher than that made in home country as evident from the graph.

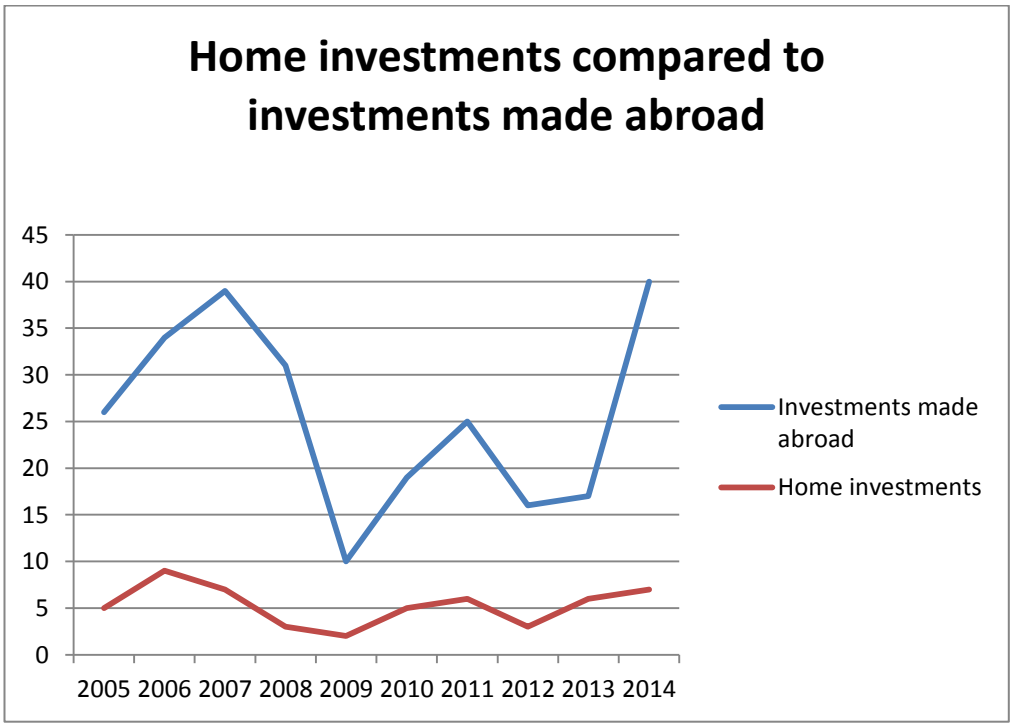

Figure 10. *Home and foreign investments made by the largest manufacturing companies in the Nordic countries (except Norway).*

Similarly, Figure 11 elaborates the investments made by Finnish companies in home and foreign locations. Six companies representing Finnish investments are: Neste, Nokia, Stora Enso, UPM-Kymmene, Outokumpu and Metsä arranged in descending order of highest turnover in the year 2014. The number of investments made by these companies in Finland is far less than the number of investments made abroad.

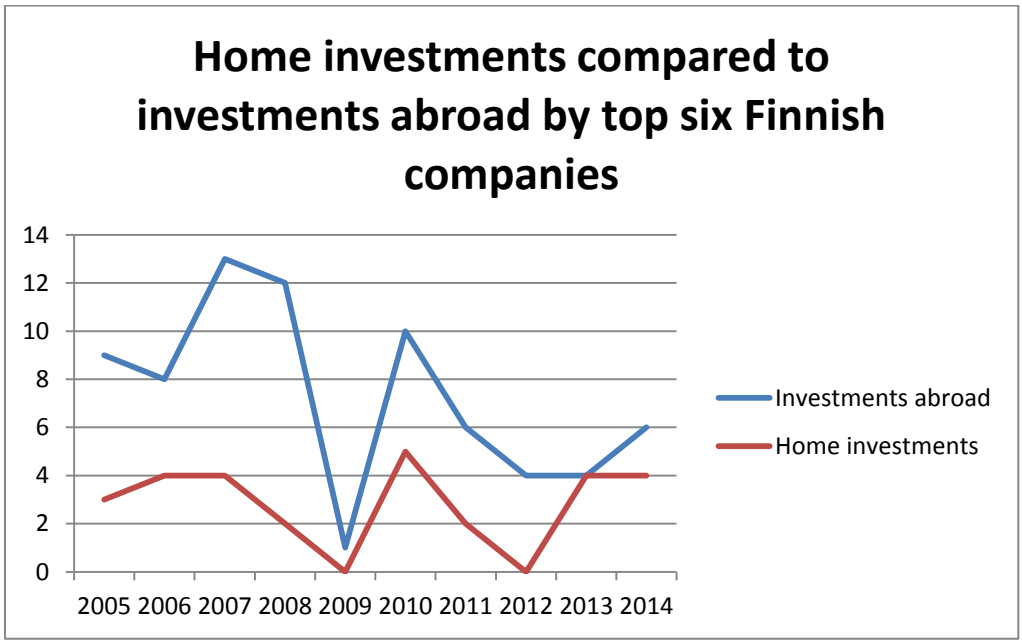

Figure 11. *Home and foreign investments made by Finnish manufacturing companies.*

Based on the above trends, it is clear that the large companies operate globally and therefore, their investments are highly concentrated towards foreign locations rather than at home. Table 13 elaborates the individual investments made by six Finnish companies over the time period extending from 2005 to 2014. The number within the brackets represents the number of investments made in the home country.

Table 13. *Individual investments made by Finnish companies.*

Company	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Metsä	3 (1)					4 (3)				
Neste		1 (1)	1		1		1 (1)	2	3 (2)	3
Nokia	2	2	3	2		1	2	1		1
Outokumpu	1		6	10		8	1			2
Stora Enso	1	8 (3)	6 (3)	1(1)		2	4		5 (2)	3 (2)
UPM-Kymmene	5 (1)	1	1	1				1		1 (1)

4.1.2. Reasons for investments by Danish Companies

4.1.2.1 For home investments

In case of Denmark, only seven investments in Denmark could be found that were made by three large revenue companies among six. Furthermore, the investment amounts with asterisk represent unclear currency of investment in the news articles as in Table 14.

Table 14. *Top 7 Danish investments at home and reasons.*

S.N.	Company	Year	Investment (MEUR)	Nature of investment	Reason
1	Novo Nordisk	2015	199.3	Development	To meet the future growth
2	Novo Nordisk	2011	134	Development	To meet the future demand
3	Carlsberg	2006	107.4	Replacement	To achieve modern and efficient brewery house
4	Novo Nordisk	2014	89.9	Development	To expand production capacity
5	Novo Nordisk	2013	50.3	Development	To increase plant efficiency
6	Arla	2013	*120**	Development	To increase production volume
7	Arla	2014	*38**	Development	To maintain market leadership

Except the replacement investment made by Carlsberg, all the remaining investments made by other two companies are for development purposes. This indicates lack of new investments made in Denmark by these biggest six Danish companies. The reasons for home investment by Danish companies mostly include improving efficiency, meeting future demand, increasing production and keeping stronghold in market.

4.1.2.2 For foreign investments

The investments made by six Danish companies in global locations can be seen in Table 15. The investments are mostly meant for new as well as development purposes. All six companies have made manufacturing investments within the research timeframe.

Table 15. *Top Danish investments abroad and reasons behind them.*

S.N.	Company	Year	Investment (MEUR)	Nature of investment	Reason
1	Carlsberg	2013	625.7	New	To strengthen market leader position in western China
2	Novo Nordisk	2008	273.8	Development	To serve as primary production site in the Asia-Pacific area
3	Vestas	2012	200	New	To start electricity production by renewable sources
4	Arla	2014	186.1	Development	To meet local demand and produce locally
5	Arla	2010	116.6	Development	To expand product portfolio
6	Vestas	2009	83.1	Development	To target key sales market in Western Europe
7	Danfoss	2011	77.8	Development	Unknown
8	Danfoss	2012	75.3	Development	To meet an expected growth
9	Vestas	2009	68	Development	To tap into growing business opportunities in China
10	Novo Nordisk	2010	57.5	Development	To invest in emerging markets
11	Novo Nordisk	2010	52.5	Development	To accommodate increased production capacity
12	Danish Crown	2014	45.9	Development	To increase exports to China and Hong Kong

The reasons to invest carry typical business rationality. The reasons include strengthening market position, meeting local demand, entering new business arena, expanding product portfolio, increasing production capacity, decreasing reliance on imports while serving the local market. One of the reasons for investment for Danfoss is unknown due to lack of detailed insight in the news article.

4.1.2.3 Investment locations

Table 16 lists the magnitude, nature and location of biggest investments made abroad by top six Danish manufacturing companies. China dominates as the most popular location for four investments among top twelve followed by UK. Other locations include India, Kazakhstan, USA and Russia.

Table 16. *Foreign locations for Danish manufacturing investments.*

S.N.	Investment (MEUR)	Nature of investment	Location
1	625.7	New	China
2	273.8	Development	China
3	200	New	Kazakhstan
4	186.1	Development	UK
5	116.6	Development	UK
6	83.1	Development	Ukraine
7	77.8	Development	China
8	75.3	Development	India
9	68	Development	China
10	57.5	Development	Russia
11	52.5	Development	USA
12	45.9	Development	UK

4.1.3. Reasons for investments by Swedish companies

4.1.3.1 For home investments

In case of six Swedish companies, the top twelve investments in Sweden are dominated by Volvo Cars, Volvo, Svenska Cellulosa, and Atlas Copco as in Table 17. The nature of investments in Sweden by these companies is overwhelmingly for development purpose.

Table 17. *Top Swedish investments at home and reasons behind them.*

S.N.	Company	Year	Investment (MEUR)	Nature of investment	Reason
1	Volvo Cars	2012	4295,5	Development	Series of investments to achieve economies of scale and boost competitiveness
2	Volvo	2007	176.9	Development	To meet increased demand in Eastern Europe and Asia
3	Svenska Cellulosa	2007	83.2	Development	To improve product quality and save money and resources
4	Volvo	2005	70.2	Development	Unknown
5	Svenska Cellulosa	2014	64.7	Development	To increase production and broaden product mix as per demand
6	Svenska Cellulosa	2011	62.4	Development	To increase production of the share of value-added products
7	Svenska Cellulosa	2009	52.4	Development	To increase production and reduce greenhouse gas emissions
8	Volvo	2008	32.1	Development	To meet increased demand, increase capacity, reduce impact on the environment and

					improve quality
9	Svenska Cellulosa	2009	26.7	Development	To improve production capability, increase delivery safety and future quality demand
10	Svenska Cellulosa	2008	22.6	Development	To reduce production costs, boost production volume and enhance quality
11	Volvo	2006	16.2	Development	To improve quality, greater capacity, lower costs and a range of environmental benefits through reduction in solvent emissions
12	Atlas Copco	2005	4.3	Development	Unknown

The reasons include boosting competitiveness, meeting global demand, improving product quality, increasing production and product mix, and reducing emissions. Two investments reasons are unknown due to limited information in their respective news coverage.

4.1.3.2 For foreign investments

Only five among the six Swedish companies emerge in the top twelve investments made in foreign location list as in Table 18. The nature of investment is a mix of new investments as well as development ones. Volvo and Volvo cars dominate the list followed by Ericsson, Svenska Cellulosa, and Electrolux.

Table 18. *Top Swedish investments abroad and reasons behind them.*

S.N.	Company	Year	Investment (MEUR)	Nature of investment	Reason
1	Ericsson	2006	797.1	Development	To ready for launch of 3G mobile services
2	Volvo Cars	2011	508.3	New	To support expansion in China
3	Volvo Cars	2015	449	New	Unknown
4	Ericsson	2008	341.7	Development	To take advantage of the growth in Indian market
5	Volvo Cars	2012	192.1	New	To achieve long-term sales growth
6	Svenska Cellulosa	2009	172.5	Development	To improve product offering, competitiveness and profitability
7	Svenska Cellulosa	2012	162.5	Development	To strengthen the market position in Russia
8	Electrolux	2015	150	Development	To secure production at all four Italian plants and save all jobs
9	Volvo	2011	150	Development	Unknown
10	Electrolux	2011	136.6	Development	To extend growth in North American market
11	Volvo	2008	101.8	Development	Unknown
12	Svenska Cellulosa	2008	99	Development	To serve fast growing USA market

The reasons for the investments are mix of market expansion, new service development, seeking growth in emerging markets like China and India, supporting sales growth,

improving market position, and competitiveness. Two investments by Volvo are listed as unknown due to insufficient information.

4.1.3.3 Investment locations

China and Russia are the most popular destinations for the six largest Swedish manufacturing companies as in Table 19. USA, India, Brazil, Italy and Mexico also make in the list of top destinations attracting Swedish investments.

Table 19. *Foreign locations for Swedish manufacturing investments.*

S.N.	Investment (MEUR)	Nature of investment	Location
1	7909	New	China
2	797.1	Development	China
3	508.3	New	China
4	449	New	USA
5	341.7	Development	India
6	192.16	New	Brazil
7	172.53	Development	Mexico
8	162.5	Development	Russia
9	150	Development	Italy
10	150	Development	Russia
11	136.6	Development	USA
12	101.8	Development	Russia

4.1.4. Reasons for investments by Finnish companies

4.1.4.1 For home investments

The nature of the manufacturing investments made in Finland is mostly focused on development. As seen in Table 20, major reasons for those investments include boosting capacity, optimizing production, meeting demand, making cost savings, and strengthening market position. Besides these, the other reasons include improving product quality, extending raw material base, addressing customers' quality demands and transformation towards becoming renewable business.

Table 20. *Top investments at home and reasons behind them.*

S.N.	Company	Year	Investment (MEUR)	Nature of investment	Reason
1	Neste Oil	2006	600	Development	To boost capacity
2	Neste Oil	2014	500	Development	To improve production competitiveness
3	Outokumpu	2010	440	Development	To meet growing demand abroad
4	UPM-Kymmene	2014	160	Development	To strengthen market position
5	Stora Enso	2014	110	Development	To address growing demand
6	Neste Oil	2006	102	Development	To increase capacity and output
7	Outokumpu	2007	90	Development	To increase capacity and decrease set-up time
8	Neste Oil	2013	65	Development	To improve production
9	Stora Enso	2006	47	Development	To increase efficiency and cost savings
10	Stora Enso	2015	43	Development	To meet growing demand
11	Metsä	2010	42	Development	To improve product quality
12	UPM-Kymmene	2005	40	Development	To improve efficiency and meet customers' quality demand

4.1.4.2 For foreign investments

Table 21 lists the nature and reasons behind the investments made in foreign location by large Finnish firms. The nature of investment varies from entirely new investment to development investments in existing facilities abroad. The reasons for those investments consist of serving local market, increasing capacity, strengthening market position, proximity to key markets and raw materials, synergy opportunities, improving cost competitiveness, reducing direct costs (raw material), and meeting demand. Besides these top reasons, there are other reasons which consist of improving quality, getting access to lower labor cost, enhancing logistics connectivity, reducing energy costs, achieving better cost competitiveness, serving new markets and eliminating bottlenecks.

Table 21. *Top investments abroad and reasons behind them.*

S.N.	Company	Year	Investment (MEUR)	Nature of investment	Reason
1	UPM-Kymmene	2008	1000	New	To serve the local market
2	Metsä	2005	885.5	New	*Unknown*
3	UPM-Kymmene	2006	875.8	Development	To increase capacity and strengthen market position
4	Stora Enso	2014	760	New	To serve the local market
5	Neste Oil	2009	670	New	Proximity to key markets and synergy opportunities
6	Neste Oil	2008	553	New	Proximity to raw material
7	Stora Enso	2012	285	Development	To meet customer demand
8	Stora Enso	2012	280	New	To reduce raw material cost
9	Stora Enso	2008	260	Development	To reduce fuel costs and emissions
10	Outukumpu	2008	240	Development	To meet future demand
11	Nokia	2011	200	New	*Unknown*
12	Nokia	2005	120	New	To meet growing demand

4.1.4.3 Investment locations

Manufacturing investments by large Finnish firms are spread globally as shown in Table 22. In Asia, China, India, Vietnam and Singapore have observed huge investments. Similarly, investments have also been made to European countries like Russia, Netherlands, Poland, Belgium, Germany, Romania, Sweden, Scotland, Estonia, UK, France, Austria and Czech Republic. Mexico, USA and Uruguay have also received manufacturing investment from Finnish firms in North and South America combined.

Table 22. *Foreign locations for Finnish manufacturing investments.*

S.N.	Investment (MEUR)	Nature of investment	Location
1	1000	New	Russia
2	885.5	New	Uruguay
3	875.8	Development	China
4	760	New	China
5	670	New	Netherlands
6	553	New	Singapore
7	285	Development	Poland
8	280	New	Uruguay
9	260	Development	Belgium and Germany
10	240	Development	Sweden, USA and Germany
11	200	New	Vietnam
12	120	New	India

4.1.5. Summary

The investment trends of the three countries: Finland, Sweden and Denmark suggest that the drop in the years 2009 and 2012 are representative of the global financial crisis

of 2008/2009 followed by Eurozone debt crisis of 2012. In case of Finland, the investment trend is consistent with the overall trend.

If only top investments are considered at home country and foreign locations, then there are no new investments made in home country but mostly made in foreign locations. The reasons for new investment in foreign location by the 18 companies can be summed up as:

- To strengthen market leader position in western China
- To enter market of electricity production by renewable sources
- To expand market in China
- To support expansion in the world's largest car market – China
- To achieve long-term sales growth
- To serve the local market
- Proximity to key markets and synergy opportunities
- Proximity to raw material
- To achieve low raw material cost
- To meet growing demand in emerging economies

Based on location variables theory of Dunning (1998), the classification of the above listed reasons is made as in Table 23. Mostly the companies are looking to improve market access and position by increasing sales and producing close to production inputs. The companies are looking for growth in emerging markets by making new investments to produce locally.

Table 23. *New offshore investments classified under Dunning's theory.*

Location variable (Dunning, 1988)	Reasons for new investment abroad
Resource seeking advantage	proximity to raw material, synergy opportunities
Market seeking advantage	strengthen market leader position, enter market of electricity production by renewable sources, expand market in China, serve the local market
Efficiency seeking advantage	achieve low raw material cost, strengthen market leader position
Strategic asset seeking advantage	synergy opportunities, achieve long-term sales growth

As discussed in section 4.1.4.1 and 4.1.4.2, the following can be highlighted as the key factors driving manufacturing investment decisions in large Finnish firms:

- Reducing costs (Labor cost, raw material cost, fuel cost, energy cost)
- Production optimization
- Quality improvement
- Diversification
- Meeting global demand
- Proximity to key markets
- Proximity to supply
- Synergy opportunities
- Logistics connectivity
- Elimination of bottlenecks

These factors are comparable with the various factors influencing location decisions discussed broadly in section 2.2. Even though the strategic reasons can be identified from the nature of the investments, the actual factors that entice those investments to specific locations are difficult to learn from the news articles. Limited information in captured in the articles barely includes push or pull factors behind those investments. To identify the push-pull factors, primary data sources need to be looked upon which in case of large companies can be challenging.

In regards to where the large firms invest, the findings point towards emerging markets like China and India, or attractive and close markets like Russia, lower cost nations like Vietnam, Mexico and Poland. The choice of these locations might be different however some inference can be made depending on the nature of the advantages the companies enjoy at those locations. The reasons for large global firms to invest can be vary from the reasons for small and medium firms. Therefore, this initiates the discussion on how small and medium firms make their investment decisions or more specifically offshoring and reshoring decisions compared to large firms.

5. EMPIRICAL RESULTS

This chapter consists of the results of the qualitative survey followed by semi-structured company interviews of the four case companies. First part will provide background information of the case study companies. The following sections will present the outcomes of the survey and the interviews.

5.1. Background information of case companies

Company A

Established in 1974, company A is a developer, manufacturer and marketer of growing media, fertilizers, soil improvement materials and products for composting. They also develop products and techniques designed to promote the processing and utilization of household waste and other types of waste, and the enhancement and protection of the environment. The company is privately owned employing around 150 employees and currently holds market leadership position (about 80%) in organic gardening and small scale composting in Finland. The company has own production facilities in Finland, Estonia and China. In 2014, they moved their partial production unit from China to Eura, Finland.

Company B

Company B is a Finnish led luminaire manufacturer which provides lighting solutions for companies and public sectors. It is a privately owned company established in 2009 and employs around 35 employees. Their recent reshoring activity took place in 2013 when they ceased their production sub-contracting from China and decided to begin their own operation in Joensuu and Oulunsalo, Finland. In the Spring 2015, they added another production operation unit in Kempele. With annual revenue of 5 million Euros in 2014, and 8 million Euros projected in 2015, the company is initiating exports to global markets in the near future.

5.2. Profile of respondents

Respondent 1 (Company A)

Interaction time: 1 hour 15 minutes

Respondent 1 currently is Managing Director of one of the subsidiaries which also includes the reshored production unit in Company A. He has been working with the company for more than 20 years in different roles. He was relocated to China operations appointed as General Manager in 2010. In his opinion, Chinese market was not ready for the company but carries huge future potential. He also submitted cost calculation during the reshoring decision-making which was overlooked by considering the calculations made in Finland.

Respondent 2 (Company B)

Interaction time: 55 minutes

Respondent 2 is currently Production Manager in Company B who is looking over Quality management system for upgrading the company into ISO 9001 standard. He has been with the company for more than a year now. As he was a recent recruit, he was unaware of the company's initial offshoring and recent reshoring engagements therefore he consulted the company CEO for his responses.

5.3. Case 1: Company A

Estonia (2000)

Company A had offshored to Estonia in early 2000 with two own production facilities. The drivers in offshoring decisions were abundance of resources, similar resources (bogs, peat swamps) as present in Finland, and some additional resources not available in Finland, costs (raw material and labor) and possibility to reduce logistics costs. The markets (including Spain, China, Australia), where the professional substrate products were exported, were in close proximity to Estonia rather than Finland. Besides, the company was well known to Estonia through similar television channels to Finland therefore gaining market leadership was easy.

China (2008)

In 2001, the company was already sourcing small production components from China. The two driving elements behind the move to China were: cheap price (one-tenth compared to Finland) of tooling and molds, and short delivery time (21 days compared to 12 weeks in Finland). The mode of entry then was through contract manufacturing. As the company found a trusted partner, the company moved on to learn about the market, business etiquettes in China, and the future market potential. Then in 2008, the company decided to have its own manufacturing unit in China. The three support legs behind the establishment are listed as follows:

1. Export of peat based substrate products to greenhouse growers in China
2. Sourcing and subcontracting of plastic components from China
3. Establish the company's brand among Chinese consumers

The main driver having an own company in China among the above three was to export the peat based substrate products to greenhouse growers. The requirement to establish a manufacturing facility was to fulfill the increased requirement of plastic components as a result of large R&D investments oriented towards new business development initiated in the year 2008. In addition to these, the long term plan was to establish a brand image among the Chinese consumers that carried huge market potential in the future.

Offshoring to China was a learning process for the company. Initially, there were few misunderstandings, issues with quality and trust issues. There were mainly issues such as the first production batch not matching the quality of the first samples and minor incidents of financial cheating. However, working with one good partner allowed the company to quickly realize the goals set for offshoring.

Eura (2014)

The company decided to bring one of its plastic production machines from Suzhou (China) to Eura (Finland) in 2014. The company noticed that the number of products being imported from China was increasing and so was the cost of sea freight. In one hand, the logistics cost was increasing and on the other hand, Euro was continuously losing its value. This forced the company to reconsider the rationality behind producing in China and especially when there was empty space in the new production facility in Eura that could easily accommodate the plastic production machine.

The decision to reshore was welcomed particularly during the time when Finland was facing economic crisis and general pessimism was taking over. Customers of the company, who exported large portion of their products, welcomed the move as the

'Made in Finland' label carried great value for them. Even though the move created only two full time job positions, the company also observed opportunity to venture in new business area. There were other perceptions that were skeptical and rated the reshoring move as failure of the company in China which the company does not agree with. Furthermore, the company had actually left production in China that was serving the customers in China. The partial production brought to Finland is targeted to serve the customers in Finland.

Since the plastic production machine was meant for production in China and not in Finland, the company also faced few challenges. There were technical difficulties as the unit was less automated and required frequent maintenance. This resulted in increased production cost which was unexpected and unaccounted in the managerial calculations. The payback period set for the reshoring decision was one year but it was not met following the surprising/hidden costs that emerged along way.

5.4. Case 2: Company B

China (2009)

Company B started their operations in the year 2009. Initially, they had no production operations in Finland and they preferred to work in co-operation with sub-contractors in China. Product development was done in co-operation with contract manufacturer.

Initially, Company B was a young and small start-up with limited market share. As a result, they did not choose to produce on their own in Finland. Besides this, the technology base in Finland was not strong enough in 2009/2010 to provide the desired outcomes the company wanted. Since sub-contractors in China had all the preparedness for required production and their readiness to deliver according to the Company's needs made China an optimum match for production outsourcing. With this co-operation, the Company's envisaged to move fast and conquer the market.

The benefit of outsourcing production to China was evident from the ability to offer products quickly. The time from development of product idea to product launch was significantly faster relative to if manufacturing operations done in Finland at that time. This enhanced the Company's ability to operate efficiently. However, there were few communication challenges regarding understanding of English language and consequently addressing the Company's requirements.

Finland (2013)

The company started their own production operations at two locations: Joensuu and Oulunsalo in 2013 followed by new production location in Kempele in 2015. There were three specific reshoring goals set by the company listed as follows:

1. to achieve high-tech partnership
2. to achieve sales growth, and
3. to achieve better operating speeds.

The main reason behind the move was to have control over the launch of more complex products in co-operation with their strategic partners and in close proximity to their customers. This helped the company to shorten their lead time as well as response time. From logistical point of view, the cost savings were considered as a bonus which carried logical sense also as majority of the company's customers were from Finland.

While the company was looking for growth from the new production investment, they also were excited to exploit Finnish know-how in the pursuit. 'Made in Finland' was crucial value addition to the customers as well as in finding strategic partners within Finland and in Germany for growth. Having production close to R&D has allowed better quality management and improved flexibility for the company.

As a result of reshoring, the annual sales have catapulted by 50%. The company is already has some export operations and are preparing for larger exports in the future. Since the production facilities began, there were 15 full time jobs created in Finland. The company aims to centralize its operations at Kempele unit in near future.

6. DISCUSSION

6.1. Summary of production location decisions

While describing the term ‘outsourcing’, the literature study emphasized on the production activities to be done previously by the companies itself before handling it to external suppliers. But both the case companies had sub-contracted production activities that were never done in Finland on their own. For this reason, they firmly stated that nothing was ever ‘offshored’ from Finland.

Both the companies sub-contracted to China which involved foreign suppliers. Since it involved a foreign supplier, the control of production was not within the companies. Furthermore, China being a foreign location, the spatial dimension was international. This qualifies to the definition of ‘offshore outsourcing’. The question unclear is whether the production should have been first in Finland or not to term the case companies actions as offshore outsourcing.

Issue of whether or not the action was offshoring reappeared while finding an agreement in ‘reshoring’ actions. Case Company A argued that since the own production in China originated not in Finland but in China itself. Therefore, they were reluctant to term their actions of bringing one production unit to Finland as reshoring activity. Instead they suggested that if the production unit was first in Finland and then moved to China and then again brought back to Finland, only then the action of bringing the production unit back can be called as reshoring. This understanding supports the definitions in the literature part. But their action of investing in their own production unit in China carries traits of captive offshoring. By investing themselves, the company had their ownership control over production activities in foreign location.

Similarly, Case Company B preferred to refer their action of initiating production units in Finland as ‘new investment’ rather than ‘reshoring’. They also urged that they did not own any production unit in China and therefore nothing came from China to Finland and vice-versa. They believed that the term ‘reshoring’ would not be appropriate in their case because investment in Finland was their very first production investment.

The action of sub-contracting to a foreign supplier supports the traits of offshore outsourcing in both cases. The trait that is lacking is the existence of production unit in Finland in the first place before the sub-contracting action. Their action of bringing one production unit or investing in new production units should fall under external reshoring which can be argued again for the same reason of not having production initially in Finland. At the moment, both companies have control the ownership of production in their home country which resembles traits of external reshoring.

6.1.1. What was outsourced?

The manufacturing activities that were offshore outsourced fell under non-core competences of both the companies. Company A first sub-contracted, partnered and then invested on own production in China but production of tooling and plastic molds was not their core competence. It was a support action to boost their R&D initiatives when the company was aiming for new business development. Similarly, core competence of design and R&D for Company B never left Finland but only the entire production was done in China. This suggests that the company was aware of what was core in delivering competitive advantage for their business success and which they refrained from outsourcing.

6.1.2. Opposite trend?

As observed previously in Figure 10 in section 4.1.1, the investments made by the six largest Finnish manufacturing companies dropped in the years 2009 and 2012. Interestingly, however, Company A made an offshore investment in own production unit in 2008, and Company B started its production operation through Chinese suppliers in 2009. This indicates that when the big companies were shy of making new investments, these two small medium enterprises were taking bold decisions by initiating offshore investments. Similarly, Company A reshored its production unit in 2014 and Company B invested in its own production unit in 2013. This is the time, as seen in Figure 13, when the large companies' home investments are looking stagnant. Both these evidences point towards a presence of opposite trend in case of large companies and SMEs way of making investment decisions in times of global economic crises. One of the reasons behind this could be the commitment of SMEs for the long-term goals rather than immediate returns (quarter, semi-annual or annual) that daunt the large public enterprises.

6.2. Factors for case companies' location decisions

For Case Company A:

Case Company A had one clear case of captive offshoring to Estonia where they maintained the ownership and control over the production operations. Even though the production was not reshored to Finland, it still is relevant for discussion on factors influencing the choice of Estonia as offshore location. The company had access to huge similar resources (bogs and peat swamps), additional raw materials not available in Finland then, and cost savings from raw materials, labor, and logistics in Estonia. If these factors are spread according to theories postulated by Dunning (1998) and Ferdows (1997), then the outcome would be as in Table 24.

Table 24. *Strategies and variables influencing Company A's offshoring to Estonia.*

Factors	Major advantages (Dunning, 1998)	Strategic reasons (Ferdows, 1997)
Availability of similar and additional raw materials	Resource seeking advantage	-
Availability of cheap raw materials and labor	Efficiency seeking advantage	Access to low cost production input factors
Access to Estonian market	Market seeking advantage	Proximity to market
Relatively close proximity to export markets (Spain, Australia, China) compared to Finland	Strategic asset seeking advantage	Proximity to market

Access to similar and additional raw materials in Estonia fulfilled resource seeking advantage for Company A. Furthermore, getting those raw materials in cheap prices ensured efficiency by creating opportunities to reduce production costs. Production in Estonia allowed the company to capture market leadership position within Estonia which clarifies the significance of producing close to the market. The export markets were closer from Estonia compared to Finland which brought logistics savings hence creating strategic asset for the Company.

On other hand, the offshore outsourcing to China by Company A involved two precise factors: cheap cost of raw materials (plastic molds and tooling) and their delivery time. As in Table 25, Availability of cheap raw materials delivered both resource seeking advantage as well as access to low cost production input factors. Faster delivery rimes enhanced the efficiency of new product development envisaged by intense R&D investment. Additionally, the presence in China allowed export opportunities for professional cultivation products as well as establish the company's brand in the long term. From this view point, the company was aiming both at market seeking advantage by improving proximity to the market. Also, the presence of the company in China allows capturing the business know-how by having access to skills and knowledge about Chinese market.

Table 25. *Strategies and variables influencing Company A's offshoring to China.*

Factors	Major advantages (Dunning, 1998)	Strategic reasons (Ferdows, 1997)
Cheap raw materials	Resource seeking advantage	Access to low cost production input factors
Delivery time of raw materials	Efficiency seeking advantage	-
Proximity to Chinese market	Market seeking advantage	Proximity to market Access to skills and knowledge

If the factors influencing relocating one production machine to Finland is observed, the relevant factors like logistics cost, delivery times and economic factors like exchange rates. These along with additional company specific factors will be discussed in detail during the discussion of pull factors in reshoring for Company A.

For Company B

The factors behind offshore outsourcing opted by Company B is driven by factors like flexibility and readiness of Chinese sub-contractors, speed to product launch to market requirement, and technology base in China as in Table 26. As a new company, the market share would not support the expensive production cost along with longer delivery times in Finland. Exploiting superior technology know-how, skills and

knowledge of Chinese suppliers according to company's requirements allowed the company to relish strategic asset as well as efficiency seeking advantage. The opportunities to improve time to market to Finland offered in exchange of tacit knowledge working with Chinese sub-contractors fulfilled strategic asset seeking advantage.

Table 26. *Strategies and variables influencing Company B's offshoring to China.*

Factors	Major advantages (Dunning, 1998)	Strategic reasons (Ferdows, 1997)
Flexibility of high-tech Chinese suppliers	Strategic asset & efficiency seeking advantage	Access to skills and knowledge
Time to market/product delivery to Finland	Strategic asset seeking advantage	-

Similarly, the goals of reshoring set by Company B were to form high-tech partnership, achieve sales growth, and enhance operating speed. The company's presence in Finland created avenues for strategic partnership as shown in Table 27. With those efficient partners ranging from technological to financial know-how, the company was able to upgrade their products and services in delivering increased customer value solving problems together with customers and helping them reap the life-cycle benefits. Producing in Finland or close to the majority customers allowed the company to gain efficiency in operating speed and also allowed the customers to trust the company and their solutions which resulted in higher sales growth enabling market growth.

Table 27. *Strategies and variables influencing Company B's reshoring to Finland.*

Factors	Major advantages (Dunning, 1998)	Strategic reasons (Ferdows, 1997)
Formation of high-tech partnership	Strategic asset seeking advantage	Access to skills and knowledge
Gain operating speed by producing locally	Market seeking advantage	Proximity to market
Market growth	Market seeking advantage	Proximity to market

If all the major factors and their sub-factors are listed, the factors that affected the two case companies' location decisions can be tabulated as in Table 28:

Table 28. *Factors affecting location decisions in case companies.*

Major Factors	Sub-factors
Costs	Cost of raw materials, logistics costs, labor costs (Company A)
Labor characteristics	Quality of technological know-how (Company B)
Proximity to suppliers	Speed, readiness and responsiveness of suppliers (Company A & B)
Proximity to markets/customers	Proximity to demand (Company A: Estonia, Spain, Australia, China, Finland; Company B: Finland)
Proximity to parent company's facilities	Close to parent company and R&D (Relevant for both companies as driver for reshoring)
Economic factors	Strength of currency (Currency fluctuation; Company A)
Social and cultural factors	Customer characteristics (valuing products made in Finland; Company A & B)
Characteristics of a specific location (Finland)	Availability of production space (Company A), proximity to customers and partners (Company B)

From the above table, it is clear that the decision to locate a manufacturing plant is dependent on various factors which change according to time and the priorities of the company. This shows ever changing dynamics of business and various considerations companies have to make in different settings based on resources, strategies and similar others.

6.3. Push factors behind offshoring

Company A

The basic assumption for reshoring to take place is that there should be previous outsourcing or offshoring of production. Company A offshored to Estonia but did not

reshore that production. However, the experience of moving to China and coming back to Finland creates base for reshoring research. Hence the push-pull factors discussion will not focus on Estonia move but only the move to China and back.

As defined in the reshoring framework, push factors behind offshoring refers to the unfavorable elements present in Finland at the time company decided to buy tooling and plastic molds from Chinese sub-contractors. There were basically three main push factors in case of Company A as listed below:

1. Higher cost of raw material
2. Long delivery times of raw material
3. Market potential in China

The price of plastic molds in Finland was ten times more expensive than that in China. At the time, when company A was investing aggressively in R&D aiming for new business development, the demand of plastic molds and tooling were overwhelming. Additionally, the company wanted this demand to be fulfilled briskly but the delivery time was almost 12 weeks if the company sourced from Finnish suppliers. There was little business rationality in paying more and getting late. Furthermore, the future potential of Chinese market was not worth ignoring. In order to sell the brand and prepare for new market development in China, the company strongly realized the importance of presence of manufacturing in China.

Company B

Company B never had production operation in Finland right from their establishment. The reasons Company B refrained from producing on their own can be listed as follows:

1. Inferior technology base in Finland
2. Rigid supplier operations
3. Longer time to market

Company B was small start-up aiming for both market and efficiency gain. They had small market share and the technology base was not superior enough in Finland. To add to it as a small company, it was not easy to gain co-operation and readiness of Finnish suppliers required for the rapid growth the company was seeking. They had to wait longer if they wanted to launch their products into the market if they were forced to produce in Finland. Therefore, they chose to opt for contract manufacturing in China.

6.4. Pull factors behind reshoring

Company A

The benefits observed by offshore outsourcing to China since 2001 began to face turbulence coming to 2014. The company decided to move one of its production machines to Finland and the pull factors behind this reshoring decision were:

1. To nullify logistic costs
2. To improve flexibility
3. To deal with exchange rate fluctuation
4. To make use of idle space in new factory premise
5. To reinforce environment-friendly values

Even though cheap raw materials offered cost savings, but consistently increasing logistics cost created hurdle in transporting them from China to Finland. While the sea freight was getting expensive, the speed of delivery was shrinking all the time. Eight weeks of delivery time challenged flexible operations of the company. To add to the financial woes, value of Euro consistently dropped by 35% during 2010-2014 further questioning the rationality of manufacturing in China. Besides these factors, some company specific decisions also prompted to pull the production back. The company had invested in new production facility which could also accommodate the production machine from China and enhance production output from the new facility. Lastly, as the pioneer of recycling economy, the company in values had to reduce carbon footprint by reducing use of sea freight. Producing in Finland allowed implementing green production processes and thus enhancing environmental sustainability.

Company B

In case of Company B, the decision to reshore was more of a strategic move. The reshoring move was driven by the growth achieved by the company since commencement of operations. The main pull factors behind reshoring for Company B are as follows:

1. To develop new complex product offerings
2. To enhance operation efficiency, and shorten lead time and response time
3. To acquire strategic partnership

Majority of Company B’s customers come from Finland. Therefore it was deemed logical to produce close to the customers so that they can efficiently control their

production and enhance speed of product development, manufacture and delivery. By having own control over manufacturing, development and quality of complex products could be assured. Additionally, lead time, time taken to convert raw material into finished products, and response time, time taken to fulfill customer order, (Kim & Tang, 1997) could also be shortened. Company B also could attain strategic partners to ensured added customer value by 'servitization' of their products. Therefore, by initiating production operation close to their R&D operations allowed the company to grow and operate efficiently. Table 29 lists drivers of reshoring relevant in the two case companies.

Table 29. *Drivers for reshoring of manufacturing in case companies.*

Drivers for reshoring (and/or insourcing)	**Specific issues** (Stentoft et al. 2015)	**Relevant in case companies**
Cost	Increasing labor costs	-
	Increasing logistics costs	×
	Eroding cost advantage	×
	Higher coordination efforts and transaction costs	-
	Miscalculation of actual cost	×
	Changes in energy costs	-
	Productivity differences between locations	-
	Economies of scale and scope	-
	Capacity utilization	×
Quality	Quality not at an acceptable level	-
Time and flexibility	Delivery lead-time	×
	Demand volatility and supply chain resilience	-
	Production and delivery reliability	×
Access to skills and knowledge	Proximity to R&D resources	×
	Availability of skilled labor	×
	Utilization of new technologies and automation	×
Risks	Threat of losing know-how and intellectual property	-
	Supply chain risks	-
Currency exchange rates	Volatility in the currency exchange rates	×
Incentives	Incentives from governments	-
Other factors	Correction of a misjudged decision	×
	Increased focus on core activities	×
	Shrinking market size	-

The two companies are also subject to the specific issues driving reshoring of manufacturing except quality, risks and incentives issues. The specific issues have been

discussed and have appeared rephrased in previous discussion. This, as empirical evidence, is essential in validating and generalizing earlier literary work conducted in reshoring phenomena. Figure 12 depicts the results of the empirical research compared to the literature framework.

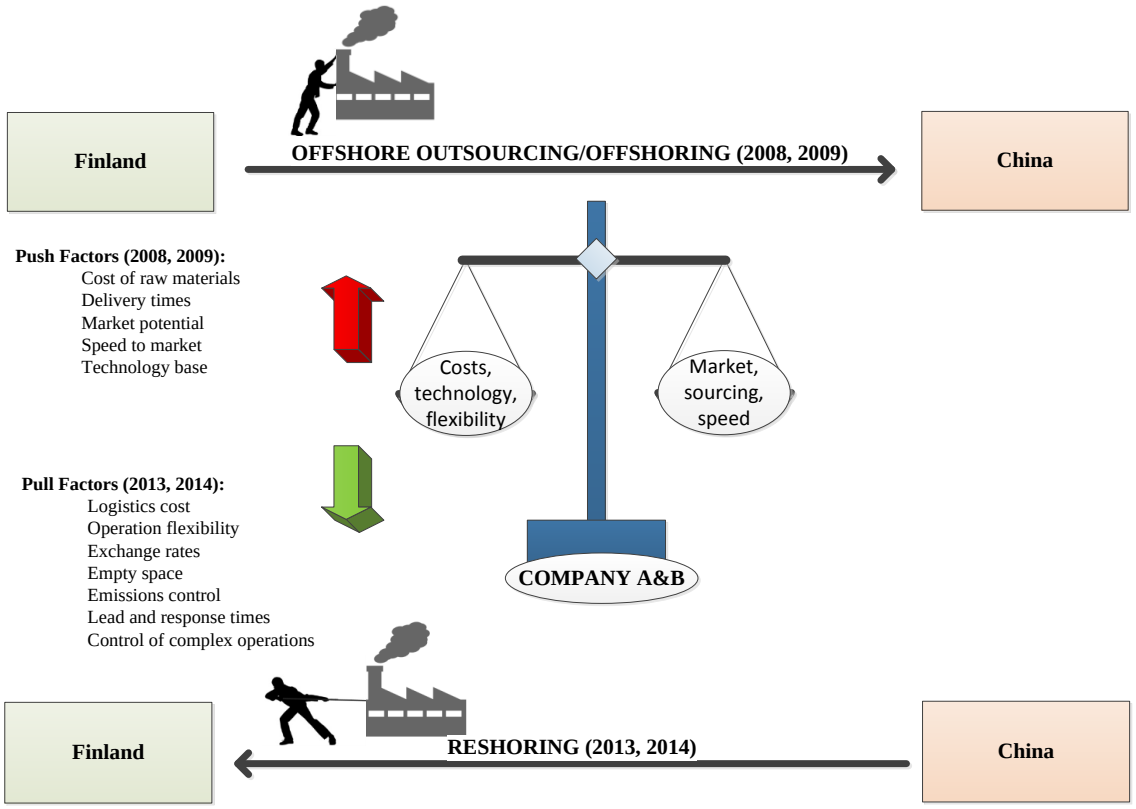

Figure 12. *Final outcome based on research framework.*

6.5. At two different crossroads

Two case companies had different beginnings in terms of available resources and now are at different crossroads. Company A's offshore outsourcing journey started with abundance of resources but that of Company B began with limited resources. In Company A, good financial situation around 2008 allowed venturing into R&D investments looking for potential growth opportunities. This required rapid testing and prototyping of ideas for new product development and hence the company looked for both cheap and quick response supply of plastic molds. Having own production in China therefore made more sense as the control could be under the company's hold and the reliance on the partners will be less.

Company A had available resources and therefore they could afford the risks of R&D outcomes. The response of respondent A clearly indicates that the move to China was a hasty one. In his words, the market was not ready for the company then and all the costs were not carefully considered while making the decision. The same applies when one production machine was reshored to Finland. Even though there were issues like increasing logistics costs, carbon emissions and exchange rate fluctuation, the most significant factor behind the reshoring decision was the pressure for the management to justify the new factory investment made in Finland. The new factory offered empty and unused space which the management intended to fill with production machine being used in China to increase production output without carefully considering all the costs. This resulted in emergence of surprising costs beyond estimated production costs which were unaccounted during the reshoring decision making. Severe managerial miscalculation was evident during both offshoring and reshoring decision-making. Even after all this, Company A is also optimistically looking towards new business development opportunity provided by the reshoring move as they have huge customer faith, and manufacturing competence to begin with.

On the other hand, for Company B, the resources at hand were limited as indicated by small market share during 2009. This required the company to rapidly grow market share. To improve the market presence, they looked for suppliers with production operations who are technologically superior and flexible. Chinese supplier emerged as best fit considering company's limited resources but ardent goals.

Company B had limited resources hence had to take calculated risks. Even though the control of production was not in their hands, they managed to communicate and clarify their requirements to their suppliers. As the company realized stronghold in Finnish market, they decided to take the business to next level by offering more sophisticated products. For this, they invested in their own operations in Finland as the company's resources had grown and Finnish know-how had outpaced their Chinese partners. They also had gained market reputation which helped them gain their strategic partners for the desired growth. With successful growth in Finland, now Company B is staring at the global business arena.

6.6. Informed decision making

From the learning in the two case studies, it is evident that decision-making in SMEs differ to that in large public enterprises. The decision-making is faster and are somehow free from the pressure to generate short-term returns. However, they are also vulnerable

to mistakes due to their limited resources ranging from finance to think-tank. It is therefore worth looking into how SMEs can make informed offshoring/reshoring decisions in order to avoid circumstances threatening their sustainability.

From the case studies, it can be concluded that there are three ways for Finnish SME manufacturers to make informed offshoring/reshoring decisions. First, they should very well understand their costs in the entire value chain. The costs here mean not only cost of production but estimation of all other relevant cost that may arise due to the decision. In order to avoid emergence of surprising costs, critical cost analysis should be conducted which would provide comparative analysis as in Figure 13. It is necessary to understand the cost savings but wise to be aware of new costs factors that might emerge in the value chain after offshoring or reshoring.

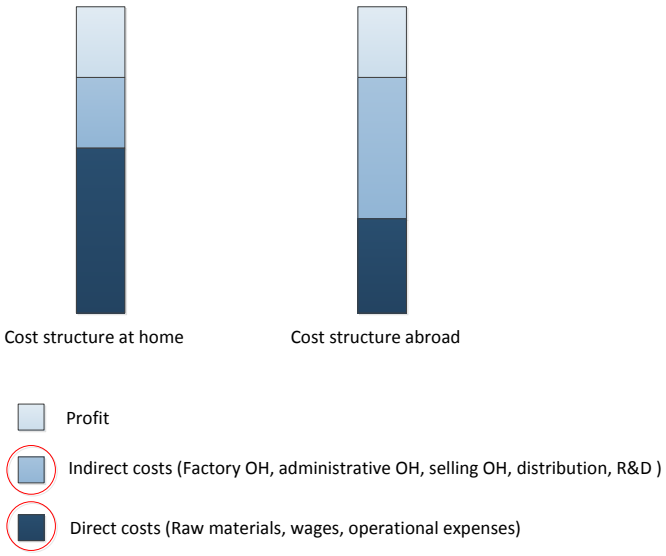

Figure 13. *Cost comparisons producing locally and in offshore locations.*

Second, the possibility to network and partner among various SMEs can also open way for innovation, added value to customers and other synergy opportunities. Merging core competences of partners can result in both incremental and radical innovation. If an entirely product based company can find a partner that can create value added services around the same products, then it can result in incremental value addition. However, if core competences come together to bring about something entirely new, it can result in radical innovation creating new business areas.

Third, they should be aware of where is their target markets and how can they excel in them by understanding what their customers really value. If radical innovation

represents technology push, listening to customers can create market pull opportunities. Understanding customer needs, problems and processes can allow the companies to find effective and efficient solutions for the customers through customer engagement. Therefore, before thinking about reshoring or offshoring, the study about the target market and customers should be conducted.

The intervention can therefore come in terms of creation of platforms for SMEs to come together and share their offshoring and reshoring experiences. This could allow creation of cost banks for different industry types as they discuss and share relevant cost headings that emerged in their value chains. The platform can also create networking opportunities for SMEs to come together and find strategic partners. Learning experiences of different markets of different companies can provide a strong reference for companies mulling over investing on those markets.

7. CONCLUSIONS

7.1. Meeting the objectives

Reshoring of manufacturing can be defined as bringing back (to home country) once offshored or outsourced production to a foreign location or a foreign supplier. Manufacturing sector is believed to have immense impact on a nation's economy therefore reshoring signals economic renewal. The drivers of reshoring vary from company to company. However, few relevant ones include increasing costs, declining quality, currency fluctuation, flexibility issues, and governmental incentives.

Database research elaborated the strategic reasons for selected large manufacturing companies of Denmark, Sweden and Finland to invest both at home and abroad. Furthermore, the study also provided better picture of what large companies aim at different locations. However, the lack of access to the primary sources of information in the large companies and to validate the reasons for their investment decisions created room for a study of SMEs involved in offshoring and reshoring.

The basic assumption behind defining theory on reshoring is the company's past involvement in offshoring to foreign location or outsourcing to foreign supplier. In order to look abroad for solving business problems, there should be pushing elements at home, termed as 'push' factors of offshoring, creating unfavorable conditions for production operations. The push factors observed in the case studies of two Finnish manufacturing SMEs include higher costs, delivery times, inferior technological base and rigidity of production operations.

As in case of offshoring, there also exist 'pull' factors of reshoring that are attracting local companies to bring their offshored production back. Such elements in case studies included increasing freight cost, longer delivery times, synergy opportunities, improving control and flexibility. The push and pull factors identified from the empirical study are congruent to the ones noted during the literature review.

It is concluded that the 'push' and 'pull' factors exist in case of Finnish SMEs. The identified factors could be the starting point for the policy makers to think critically and

come up with policies and interventions promoting reshoring and discouraging offshoring of manufacturing.

7.2. Limitations and future research avenues

The research goals were met with some reservations on the outcome. First, the sample size was limited to two companies. Due to the lack of number of reshoring companies, the results can hardly be generalized to all the Finnish SMEs involved in reshoring of production. Similarly, the evidence for nearshore could not be materialized due to only one of the company actually offshoring to a popular nearshore location.

Secondly, the research framework was designed based on the assumption that the companies had production earlier in Finland which they then moved to a foreign location. This assumption was challenged in both the case companies as they never owned a production unit in Finland but actually were involved in offshore outsourcing. This created deviation when moving from literature study to the empirical study. This emphasized the requirement of distillation of existing literature and researcher's assumption and biases while designing the research framework.

Third limitation is related with the database research. The database covered English news articles sometimes with limited information about the motives for investments. The news coverage at few incidents also missed to deliver the currency information in which the investment was made. Additionally, the choice of keywords and the interpretation of news articles by the researchers may also been subjective and biased in deducing the database results.

Future research could look into breaking gatekeeping hurdles to reach more companies and more experienced respondents involved in companies' offshoring and reshoring activities. Furthermore, the perspective and insights of customers of reshoring companies could be included to validate the rationality behind offshoring and reshoring moves. It is also suggested to study nearshore constructs for Finnish manufacturing sector.

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APPENDICES (2 PIECES)

Appendix 1. Interview framework.

Appendix 2. Companies selected for database study

APPENDIX 1: INTERVIEW FRAMEWORK

1.1 Introduction

Brief introduction of the research and the researcher

Introduction of the Company

- Job Title:
- Number of employees:
- Annual Revenue (in Euro):
- Weightage of export:

*Please choose relevant sections (**Section 1.2, 1.3 or 1.4**) based on the Company's experience.*

1.2 Offshoring Experience

1. Could you share the Company's offshoring experience? (If the Company has done offshoring.)
    i. *What was offshored? When? How was the offshoring carried out?*
2. What made the Company to consider offshoring?
3. Which business elements in Finland were unfavorable for the Company to make the offshoring decision?
4. How did the Company benefit from offshoring production from Finland?
5. What elements did the new location had in offer for the Company?
6. What was the entry mode: green-field or based on acquisition or partnership/joint venture, or outsourcing to an external supplier or contract manufacturer?
7. What were the challenges faced by the Company after offshoring?
8. How did the customers respond after the offshoring decision was made?
9. If the Company decides to offshore again, how would it be different from the previous one? Would the company offshore to the same location as before or look for new one?
10. What would the Company value most while choosing the next production location in the future:
    a. Geographic proximity
    b. Similar way of doing business
    c. Time zone overlap
    d. English as the medium of business

e. Within EU
f. Historical attachment or diaspora linkages

11. What could the Company suggest to other companies who are planning to offshore production?

1.3 Investment in Finland

1. How important is the investment for the company? What is the Company seeking strategically with this investment?
2. Why did the Company choose Finland over other countries?
3. Were there any changes or opportunities noticed in Finland before the investment decision was made by the Company?
4. Was there any specific technological or business innovation that made investing in Finland a better choice for the Company?
5. Is there any impact of price competition to the Company given the fact that cost competitiveness of Finland is shrinking? How is the Company managing its competitiveness?
6. Does 'Made in Finland' label add value (differentiation opportunity) to the product?
7. Have there been any immediate changes or responses from the stakeholders, customers, suppliers, employees? Any representative numbers (sales/exports/orders)?
8. What challenges/risks does the Company see for Finnish firms thinking to make new investment or contemplating to reshore production to Finland?
9. Does the Company see any opportunities in Finland beyond the challenges?
10. What could the Company suggest to other companies who are planning to reshore?

1.4 Reshoring Experience

1. Could you share the Company's reshoring experience?
    i. *What was reshored? When? How was the production reshoring carried out? How long did it take from the decision to reshore to the actual date of reshoring?*
2. What made the Company to consider reshoring back to Finland?
3. Was there any specific technological or business innovation that made reshoring a better choice for the Company?
4. Which business elements in the offshored location were unfavorable for the Company?
5. How did the Company benefit by reshoring?
    i. What is the impact of reshoring on the brand or productivity of the Company?

ii. *Did the sales grow? Percentage growth?*
iii. *Did the costs go down or up?*

6. What Finland has in offer for the Company now?
7. What were the goals set by the Company while reshoring? Have the goals been realized?
8. How did the customers respond after the reshoring decision was made?
9. Has there been any significant change in the amount of export?
10. How did the employee structure change after reshoring? How many new jobs were added in the company as a result of production reshoring?
11. What did the Company learn after the reshoring experience?
12. What could the Company suggest to other companies who are planning to reshore?

1.5 Concluding Remarks

Suggestions for the research team to improve the study.

Thank you!

APPENDIX 2: COMPANIES SELECTED FOR DATABASE STUDY

Date accessed: 28/10/2015

1. Finnish Companies

Metsä (http://www.metsagroup.com/en/about-us/Pages/default.aspx)

Metsä Group is a Finnish forest industry group that produces in eight countries and employing 9,800 people in 30 countries where they operate. It is owned by forest owners producing tissue and cooking papers, paperboards, pulp, wood products, wood supply and forest services.

Neste (https://www.neste.fi/segment.aspx?path=2589%2c2655%2c12915)

Neste Oil Corporation is a Finnish oil refining and marketing company founded in 2005 and listed in NASDAQ OMX Helsinki Stock Exchange. They main products include traffic fuels and petroleum products emphasizing on reduced environmental impact sold through service stations, unmanned stations and D stations. Besides Finland, they have operations in Russia and the Baltic states.

Nokia (http://company.nokia.com/en/about-us/our-company)

Headquartered in Espoo, Finland, Nokia runs three businesses in the field of network infrastructure, location-based services and advanced technologies. Until 2013, Nokia was a common name in the world of mobile device markets. It employs around 57000 people globally. They are listed both in NASDAQ OMX (Helsinki) and NYSE.

Outokumpu (http://www.outokumpu.com/en/company/Pages/default.aspx)

Outokumpu is stainless steel manufacturer established in 1910 in Eastern Finland. They have production facilities in Finland, China, Germany, Sweden, Mexico, the UK and USA. It is publicly listed company employing 12000 people across 30 countries.

Stora Enso (http://www.storaenso.com/about/stora-enso-in-brief)

Stora Enso is provider of renewable solutions in packaging, biomaterials, wood and paper employing around 27000 employees in more than 35 countries. It was established in 1998 after the merger of Finnish company Enso Oyj and Swedish company STORA. They are publicly listed both in Helsinki and Stockholm.

UPM-Kymmene (http://www.upm.com/About-us/Pages/default.aspx)

UPM-Kymmene is a publicly listed biofore (bio and forest) company with sales network in six continents. Their main businesses include bio-refining, energy, paper and plywood. They have production in 13 countries and employ around 20,000 people globally.

2. Danish Companies

Arla (https://www.linkedin.com/company/arla-foods?trk=top_nav_home)

Owned by dairy farmers, Arla Foods is a dairy company and a co-operative headquartered in Sønderhøj, Denmark. They employ more than 19000 employees spread over production facilities in 12 countries and sales offices in 30 countries.

Carlsberg (http://www.carlsberggroup.com/Company/Strategy/Pages/Facts.aspx)

The Carlsberg Group was founded in 1847 and currently the fourth largest brewer in the world. They employ more than 45000 people and carry a portfolio of 140 master brands. Asia, Eastern and Western Europe are their major markets.

Danfoss (http://www.danfoss.com/about/)

Danfoss is a privately owned technology company whose products and services are used areas related to refrigeration, air conditioning, heating, motor control and mobile machinery as well as renewable energy. In 2014, their net sales were 4.6 billion Euros and employ around 24000 people.

Danish Crown (http://www.danishcrown.com/Danish-Crown/International-Food-Company.aspx)

The Danish Crown Group is one the worlds' largest meat processing company employing about 26000 people. Establish 125 years ago as farmers' co-operative, their current revenue is about 58 billion DKK.

Novo Nordisk (http://www.novonordisk.com/about-novo-nordisk/default.html)

Novo Nordisk is a global healthcare company employing around 39700 people in 75 countries. They sell their products related to diabetes care, hemophilia, growth hormone therapy, obesity and hormone replacement therapy in more than 180 countries.

Vestas (https://www.vestas.com/)

Founded in 1898, Vestas is the only global energy company harnessing exclusively wind energy. With about 18800 employees, the company has delivered wind energy in in 74 countries. In 2015, their expected revenue stands at 7.5 billion Euros.

3. Swedish Companies

Atlas Copco (http://www.atlascopco.com/us/system/splash.aspx)

Atlas Copco is operational in more than 180 countries as sustainable productivity solutions provider. Their products and services include compressors, vacuum solutions and air treatment systems, construction and mining equipment, power tools and assembly systems. They employ around 44000 people around the world.

Electrolux (http://www.electroluxgroup.com/en/electrolux-in-brief-492/)

Electrolux is global home appliance manufacturer established in 1919. They in 150 markets worldwide and employing 60000 people. In 2014, their sales reached 112 billion SEK.

Ericsson (http://www.ericsson.com/thecompany/company_facts/facts_figures)

Ericsson is global communications network service, software and infrastructure provider headquartered in Stockholm, Sweden. It was founded in 1876 and currently employs 116240 people including 25700 R&D staffs.

Svenska Cellulosa (http://www.sca.com/en/About_SCA/SCA_in_Brief/)

Svenska Cellulosa Aktiebolaget (SCA) is a global company offering hygiene and forest products conducting sales in about 100 countries. It has headquarters in Stockholm, Sweden employing about 44000 people around the globe. Founded in 1929, their current sales in 2014 amounted to 11.4 billion Euros.

Volvo
(http://www.volvogroup.com/group/global/engb/volvo%20group/Pages/aboutus.aspx)

The Volvo Group is publicly listed company headquartered in Gothenburg, Sweden. The company is active in producing world's leading manufacturers of trucks, buses, construction equipment and marine and industrial engines. It produces in 19 countries, sells in 190 markets, and employs 100,000 people.

Volvo Cars (http://www.volvocars.com/intl/about/our-company/this-is-volvo-cars)

Volvo Car Group, headquartered in Gothenburg, Sweden, is global producers of sedans, wagons, sports wagons, cross country cars and SUVs. Selling in 100 countries, the company is owned by Zhejiang Geely Holding (Geely Holding) of China. They employ around 27000 people globally.